Evaluation of AHRQ’s Partnerships for Quality Program

Appendix B

Final Report

December 20, 2006

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Important Note

Content for grant summaries was drawn from a variety of sources, including: 1) grantee proposals, progress reports, and other grant-related documents; 2) information obtained in interviews with grant principal investigators and project partners, 3) updates on progress, outcomes, findings, and products provided by grant project leaders. Where grantee-produced documents clearly stated goals, activities, or outcomes, we used that text for the summaries. All grantee PIs or their staff had an opportunity to review the drafts of these summaries, and modify the text to ensure that it described their projects accurately.
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PFQ Grant Summary
Improving Health Care Responses to Bioterrorist Events

Lead Organization: Altarum Institute
Partner Team: Altarum Institute, Michigan Center for Biological Information (MCBI), University of Michigan Department of Emergency Medicine; Texas Community Emergency Health Care Initiative (CEHI), University of Texas Health Science Center, Texas A&M University, US Army Medical Department Board, National Pharmaceutical Stockpile of the Centers for Disease Control and Prevention, various organizations within the two target communities.

Title: Improving Health Care Responses to Bioterrorist Events
Topic Area: Bioterrorism and emergency preparedness
Principal Investigators: George Miller, PhD
AHRQ Project Officer: Sally Phillips
Total Cumulative Award: $397,835
Project Status: Completed 9/29/2006

1. Project Description

Goals. The project planned to employ the Healthcare Complex Model (HCM), a simulation modeling tool, to plan for the care that victims would need from the acute medical delivery system following a bioterrorist attack. The project proposed testing the utility and validity of HCM in supporting bioterrorism readiness planning in both a rural and an urban health care network by estimating the demand for care by medical facilities.

Project goals expanded to include the development of another model, the casualty prediction model (CPM), which, using alternative assumptions about the public health response, would estimate the spread of disease following an attack. Both models were intended to assist community efforts to plan for medical care and public health responses, including such issues as staffing, supplies, and patient flow, in the event of bioterrorism attacks or other emergency, such as naturally occurring influenza outbreaks.

Activities and Progress

Year 1. Work on the grant did not begin until March 2003, halfway through the first project year, because of delays in AHRQ’s release of funds to PFQ grantees. The project convened a series of meetings with partners to discuss HCM’s capabilities and solicit their input on setting up and analyzing the rural scenario in which to deploy HCM. The project decided to model pneumonic plague for the first application and chose Smithville Hospital, a rural hospital in Bastrop County, Texas, as the setting. The project obtained and prepared population, clinical, and facility data (input data) for the rural scenario through its partnership with the Texas CEHI and with the cooperation of the Smithville Hospital staff.

The project used the data to create several model cases that investigated alternative response strategies for dealing with a plague outbreak. Such responses included augmenting the existing medical infrastructure with volunteers and state and federal assets, for example. The analysis of the first application of HCM activity showed that, even in a rural setting with a very small number of initially infected victims, early detection of an attack and subsequent aggressive response could result both in saving a significant number of lives and in significantly reducing the demand for scarce resources needed.
to treat primary and secondary victims. The model and data that were developed for the rural setting in phase 1 could be easily extended to address issues of interest to planners in a specific community or to further general planning for rural hospital preparedness.

The HCM benefited from enhancements made in response to its use in the rural scenario. In particular, the project developed the CPM to serve as an input to the HCM and generate a patient/casualty stream that would impose demands on the acute care system in the model. Enhancements to HCM, including the addition of the CPM, were carried over to the second application of HCM in an urban setting in the second project year.

**Year 2.** For the second application of HCM, the project chose the San Antonio, Texas, area as the urban setting in which to simulate a terrorist-produced smallpox outbreak. It developed various options for the public health system to use to reduce the number of victims and for the acute care system to use to improve patient outcomes. The CPM and HCM were used to study several scenarios designed to determine the effects of early and aggressive attempts to immunize the population (mass vaccination) versus more deliberate and time-consuming tracing and immunization (ring vaccination). The project sought to closely integrate the functions of the CPM with those of the HCM so that they could improve their representation of the interrelationship between public health activities and the provision of acute care.

The project presented to public health and hospital officials in the San Antonio area what had been learned from the CPM model about the impacts of varying public health responses to a smallpox attack (including alternative vaccination programs, various actions to reduce the frequency of contacts between infective and susceptible individuals, and isolation of infective victims) on the magnitude of the patient stream arriving for treatment at medical facilities. One finding suggested that a policy of mass vaccination results in many fewer victims and a lower chance of an epidemic than does tracing and immunization alone. The HCM modeled the daily number of victims presenting for medical care, cumulative mortality, and demand for health care resources (e.g., demand for ICU beds) after a smallpox outbreak, given varying public health response measures. The model found that daily victims, mortality, and demand for healthcare resources tended to be lowest with the use of a mixture of public health measures rather than extensive use of a single measure. However, unless the attack was very small, these measures were unlikely to prevent a surge in demand for acute care that would require community-wide coordination of resources, a definitive patient triage policy, and temporary treatment practices.

**Year 3.** Activities in the third project year included a quantitative investigation of the benefits of improved surveillance on the ability to react to a smallpox attack; an analysis of the use of quarantine in response to a smallpox attack; and a validation study of the CPM. Early on, the project had established a partnership with Texas A&M, another PFQ grantee that was also doing bioterror work, and that partnership helped in gathering the input data for the study. The results suggested that early detection and response reduced the number of eventual victims, as mass vaccination reaches a larger percentage of the population before exposure. They also confirmed that initiating smallpox vaccination less than six days after the event had essentially no additional benefit, but that pursuing detection and response early enough to benefit the second generation of possible infections was necessary. In addition, the model found that a voluntary quarantine program as an adjunct to a ring vaccination program might dramatically decrease the total number of smallpox victims. The project also validated the CPM by configuring it to represent influenza and then showing it capable of producing values that are consistent with empirical data collected during epidemiology studies of populations experiencing an influenza outbreak.

**Year 4.** Since the project had already configured the CPM to represent influenza for the validation study, the project decided to modify the CPM to allow investigation of the impact of targeted vaccinations of public health workers and other first responders in the event of an influenza outbreak. Texas A&M University again assisted the project by providing input data. Results from the analysis showed the
importance of establishing a sufficient level of immunity in the first responder and health care worker subpopulations because of their high risk of contact with infective victims. Immunity in these subpopulations is important since the analysis showed that infection among them will adversely affect the ability of the community to respond to the epidemic. The project also cast doubt on the argument to establish immunity within these subpopulations prior to the epidemic, principally since small numbers of first responders and health care workers are involved. An ongoing effort involves investigating the effectiveness of other specific strategies to combat an influenza epidemic in San Antonio.

2. Partnership Structure/Function

Many of the people and organizations listed as partners in the project were consultants or advisors, lending their subject expertise in the development of the models (see table below). Communication between Altarum and these experts occurred as needed, increasing in frequency when models were being refined. Other partners listed, including CEHI, Texas A&M, and some of the target organizations, were actively involved in obtaining the data necessary to run the various simulations. Communication between Altarum and the two communities that served as the simulation settings—San Antonio and rural Bastrop County near Austin—were not regularly scheduled, but communication did increase while project was gathering information. The project also scheduled seminars and briefings in the San Antonio area to keep the community abreast of the project’s work.
### Table 1. Major Partner Organizations and Roles in the Project

<table>
<thead>
<tr>
<th>Organization</th>
<th>Role in Project</th>
</tr>
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<tbody>
<tr>
<td><strong>Lead Organization</strong> (grant recipient)</td>
<td>The Altarum Institute • Led the project, providing knowledge and expertise based on the company’s history working with advanced informatics systems solutions and knowledge tools.</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong></td>
<td>Texas Community Emergency Healthcare Initiative (CEHI) • Helped to identify the setting and obtain input data for the rural scenario to be used in HCM • Served as a functional expert in reviewing model output</td>
</tr>
<tr>
<td></td>
<td>Texas A&amp;M University • Provided input data for the influenza model and the representation of surveillance in the third and fourth project years</td>
</tr>
<tr>
<td></td>
<td>Consultants: Michigan Center for Biological Information (MCBI) • MCBI served as functional expert on bioinformatics, biological warfare, and terrorism University of Michigan Medical Center Department of Emergency Medicine • University of Michigan served as functional experts in selecting the diseases to be investigated, identifying needed data, reviewing results for validity, and inferring useful observations University of Texas (UT) Health Science Center • UT provided subject matter expertise to help develop the models and validate the models’ assumptions; also provided public health contacts in the community U.S. Army Medical Department Board Centers for Disease Control and Prevention, National Pharmaceutical Stockpile • The Army Medical Department Board reviewed results and assisted with other contacts within the Department of Defense medical community. • Representatives of the National Pharmaceutical Stockpile provided a critique of the HCM.</td>
</tr>
<tr>
<td><strong>Target Organizations</strong></td>
<td>Two Communities: San Antonio - including representatives of Region 8 of the Texas Dept. of State Health Services, San Antonio Metropolitan Health District, Greater San Antonio Hospital Council, Southwest Texas Regional Advisory Council, Brooke Army Medical Center, and Wilford Hall Medical Center Smithville Hospital in Bastrop County, TX (near Austin) • Provided settings and assisted in identifying associated data and assumptions for model simulations</td>
</tr>
</tbody>
</table>
3. **Project Evaluation and Outcomes/Results**

Altarum had been working with the HCM model prior to the AHRQ grant, using it for simulations in other contexts, including flow of patients in health systems, facilities planning, staffing, and telemedicine. The PFQ grant provided Altarum with an opportunity to continue this work and to test its utility for other simulation exercises.

The project successfully used its two models to provide information for bioterrorism planning in public health and in health care systems at the community level. One piece of information provided to the public health system in San Antonio was especially useful—that vaccinating 40,000 people a day (rather than the 270,000 the system had intended) in the event of a smallpox outbreak would be enough to control the epidemic. According to one respondent, this information helped the public health authority in San Antonio determine the number of vaccine distribution sites needed, and the correct number of sites is now in its plans. Other information provided by the smallpox simulation changed the public health authority’s purchasing strategy for bioterror preparedness supplies. The authority decided to prioritize buying certain supplies (e.g., ventilators, isolations rooms, etc.) in hospitals and coordinated and standardized the equipment purchased at those hospitals. Beyond these two examples, it is unclear how much the communities that served as the locations for the simulations used the information from the study to make other practice or policy changes. However, the models and data that were developed for both the rural and urban settings can be extended to address issues of interest to planners in a specific community or to further planning for hospital and public health system preparedness. The project also validated the use of CPM for other disease outbreaks.

4. **Major Products**


- Presentations to the University of Texas Health Science Center, December 2003 and January 2005.

- Seminar at Case Western Reserve University, March 2004.


- Presentation at the U.S. Army Force Health Protection Conference, August 2006.
5. Potential for Sustainability/Expansion after PFQ Grant Ends

After the grant ends, Altarum will continue working with both the HCM and CPM. The principal investigator hopes eventually to use the models to study a health system network representation of the spread of disease. The project’s most recent work under the grant on targeted vaccinations is a step in this direction. Though the San Antonio community expressed interest, it has not committed any funds to continue the modeling work. Altarum believes that the U.S. Department of Defense (DoD), which has more resources to devote to planning for community disaster assistance, is a more likely source of funding for follow-up work, and it has initiated discussions with DoD agencies.
PFQ GRANT SUMMARY
PARTNERSHIP TO IMPROVE CHILDREN’S HEALTH CARE QUALITY

Lead Organization: American Academy of Pediatrics (AAP)/ Center for Health Care Quality at Cincinnati Children’s Hospital Medical Center (CCHMC) [Note: Grant shifted from the National Initiative for Children’s Healthcare Quality (NICHQ) to AAP in June 2004.]

Partner Team: AAP and CCHMC with an advisory board comprising American Board of Pediatrics (ABP), Children and Adults with Attention Deficit Disorder (CHADD), etc.; also 10 AAP state chapters and 186 local pediatric practices

Title: Partnership to Improve Children’s Health Care Quality

Topic Area: Improve care for children with attention deficit hyperactivity disorder (ADHD)

Principal Investigator: Dr. Carole Lannon, MD, MPH, Center for Health Care Quality, CCHMC

AHRQ Project Officer: Charlotte Mullican

Total Cumulative Award: $1,298,266

Funding Period: 9/02–9/06

Project Status: Completed 9/29/06

1. Project Description

Goals. This project sought to improve care for children with ADHD by teaching physicians to use an interactive web-based Continuing Medical Education (CME) quality improvement tool called Education in Quality Improvement for Pediatric Practice (eQIPP). It did so drawing on the combined resources of a partnership among the CCHMC, AAP, ABP, and an advisory board of experts and related organizations, as well as state AAP chapters and pediatric practices. The project was designed to 1) improve pediatricians’ adherence to evidence-based care guidelines for children with ADHD through a training program that taught physicians to measure their processes of care with an on-line tool; and 2) develop the capacity of local chapters of professional medical organizations to support members’ improvement activities. AAP also wanted to gain recognition of this measurement-based CME program as qualifying for new ABP “maintenance of certification” requirements. If successful, the model would be used to address other health issues of children. Finally, the participating organizations hoped to learn more about the use of professional organizations to facilitate improvement at the practice level.

Activities and Progress. Year 1 of the project was spent on planning and development activities. Project staff established an advisory board, recruited and selected AAP chapters to participate in the first year of the intervention, finalized an evaluation plan and measures of success, and developed recruitment and training materials for AAP chapters and practices.

Prior to receiving the PFQ grant, the AAP developed an ADHD eQIPP module. An interactive tool for pediatricians that is available on-line eQIPP incorporates specific content education and teaches QI principles as applied to the content area. For this project, eQIPP helps physicians to assess their practices by having them answer 5-10 questions based on a review of at least 10 patient charts, and then provides feedback that allows them to evaluate their performance against relevant comparison measures and benchmarks. Physicians using eQIPP get CME credit and opportunities to track progress and monitor changes in practice over time.

In year 2, the project team (AAP/CCHMC) began technical assistance and ongoing support to the four selected AAP chapters. (Initially, the project team selected five AAP chapters but one chapter
Each selected chapter was given $13,000 to use for additional staff, program costs, or other infrastructure needs. AAP chapters were responsible for recruiting pediatric practices to participate in this project. Once the practices agreed to participate, the AAP chapters helped them to enroll in eQIPP and work through the ADHD module to complete a “prework” assignment prior to a six-hour training workshop held by their AAP chapter. The participating practices used eQIPP to collect baseline performance measurements on their care for children with ADHD.

At the training workshop, the participants learned to 1) apply key change concepts in caring for children with ADHD; 2) identify essential components of a staged implementation plan for providing optimal care for this chronic condition; 3) plan strategies for difficult cases; 4) develop partnerships with parents, educators, and behavioral health providers and community groups; and 5) provide education and support for parents and families. The AAP/CCHMC project team provided guidance for each chapter’s workshop preparation and led the quality improvement and measurement sessions at each workshop.

In year 3, the project team recruited an additional five AAP chapters and began the same series of training work with them (as well as with the chapter from year 2 that deferred participation). The project team also continued technical assistance to the original four AAP chapters and participating practices. In August 2005, the project held a one-day conference for AAP chapter presidents, just prior to the AAP Annual Leadership Forum, to highlight and share what chapters had learned about initiating local improvement efforts and supporting practices to improve care.

In year 4, the project team focused on completing the ADHD improvement efforts with the 10 AAP chapters. The team also refined its plans for evaluation and completed data collection efforts. In August 2006, the project team held a chapter leader workshop, bringing together 18 chapter teams, composed of AAP chapter leadership (executive director and physician champion) as well as local public health agency partners (such as state maternal and child health departments or Medicaid directors), in order to share lessons on how to build interest in QI, integrate QI into CME programs, and support the QI change process in practices. Public health agencies were invited because project directors believe that chapters were most successful in sustaining activities following the initial workshop when they partnered with such organizations.

2. Partnership Structure/Function

The principal investigator (PI) is located at CCHMC, although the grantee is the AAP. The two organizations jointly comprise the core project team and together manage the project. They hold monthly conference calls and have worked as partners to coach the AAP chapters to recruit practice teams, prepare practice teams for the improvement workshops, plan and conduct the workshops, manage eQIPP enrollment and data collection, and support the development of the chapters’ improvement infrastructure.

The CCHMC-AAP project team was divided into three subgroups: 1) improvement partnerships, to develop an ongoing improvement infrastructure and support AAP chapters in sustaining improvement work after the PFQ project, 2) curriculum development, to assess the ADHD workshop curriculum and review the ADHD toolkit and eQIPP modules, and 3) evaluation, to develop the measurement strategy, data collection tools, and workshop evaluations as well as to collect and compile monthly data from the

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1 The PFQ grant was originally awarded to the National Initiative for Children’s Healthcare Quality (NICHQ), but shifted to the American Academy of Pediatrics in 2004, when the PI’s center left that organization. The PI is currently located at CCHMC.
chapters and eQIPP data from the practices. Monthly conference calls are held between the advisory board and project team subgroups.

Monthly conference calls are also held between the CCHMC-AAP project team and the AAP chapters. These calls serve to coach chapter leaders in the recruitment of practices, help pediatricians with preworkshop preparation, plan the workshops, and coordinate with expert faculty.

Regular calls take place between the CCHMC-AAP project team, the AAP chapters, and the participating practices. For example, the CCHMC-AAP project team held calls in early 2006 to discuss topics of interest to the practices, such as CHAAD parent-to-parent training and mimickers of ADHD. In addition, the project team, chapters, and practices communicate with each other via the project’s electronic listserv. Weekly, the CCHMC-AAP project team send a case study to the listserv and practices respond, ask questions, and/or share their experiences.

### Table 1. Major Partner Organizations and Roles in the Project

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<tbody>
<tr>
<td><strong>Lead Organization</strong> (grant recipient)</td>
<td>• Provides overall leadership; coordinates communication between partner sites, and manages the project timeline&lt;br&gt;• Coaches the AAP chapters to recruit practice teams, prepares practice teams for the improvement workshops, plans/conducts the workshops, manages eQIPP enrollment and data collection, and supports the development of the chapters’ improvement infrastructure</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong></td>
<td>• Provides counsel regarding challenges with implementation and facilitating communication, of project activities through various partnership channels.</td>
</tr>
<tr>
<td><strong>Target Organizations</strong></td>
<td>• Recruit primary care practices to participate in project; organize and sponsor training workshops; offer technical assistance and training to practices&lt;br&gt;• Attend workshop, implement practice changes, and collect/report data using eQIPP</td>
</tr>
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</table>

### 3. Project Evaluation and Outcomes/Results

The evaluation will address three major research questions: 1) Does the frequency and participation in improvement activities differ between practices enrolled in eQIPP alone and those enrolled in eQIPP with an AAP chapter support program? 2) Will appropriate disease management for ADHD improve across time for the treatment group? 3) What factors contribute to or inhibit a chapter’s ability to improve and to sustain improvement?

The evaluation will not assess the impact of the program on patient outcomes because the link between the improved process of care delivery to children and better outcomes for children with ADHD has already been established.

As of March 31, 2006, 115 individuals had entered 1304 chart reviews (612 from year 2 and 692 from year 3) into unit 1 of the eQIPP program as part of the prework for the AAP chapter workshop. Final aggregate reports are being prepared. These reports will show the proportion of charts demonstrating the
target level of care for the seven components of diagnosis and treatment for ADHD by all participating practices and by participating practices in each chapter. A manuscript describing the findings based on this data is in progress (listed under publications).

As of March 31, 2006, 45 individuals had entered follow-up data from 498 chart reviews (299 from year 2 and 199 from year 3) into unit 4 of the eQIPP program. Final aggregate reports showing follow-up data will be provided to the chapter teams that reached the 50-chart minimum instituted by the AAP.

Interviews have been conducted with team members from all 10 participating chapters. The interview data will be used in the overall evaluation to measure progress toward project aims and will also help the AAP in planning future chapter supports for quality improvement efforts. A manuscript describing the results of the interviews is in progress (listed under publications). Interviews of AAP leaders will also be conducted in the final year of the program.

All participating physicians were surveyed about their experiences with the project and the eQIPP program. The survey was initially distributed electronically and then followed up with two mailings. Analysis of responses is under way.

4. Major Products

- Resource toolkit (more than 75 pages), based on evaluation results for AAP chapter leaders, containing guidance on getting started and making presentations, as well as information on basic QI methods, successful improvement activities from AAP chapters, and workshop materials (currently in development). Two copies of each toolkit will be provided to each chapter. In addition, the guide will be available on the AAP’s website and updated regularly.

- Team members led a workshop, “From National to Local Improvement: A Multi-Faceted Intervention to Improve Care for Children with ADHD” at the NICHQ 5th Annual Forum for Improving Children’s Healthcare in Orlando, FL, in March 2006.

- Two posters were presented at the Pediatric Academic Societies Annual Meeting in San Francisco, CA, in April, 2006: “Partnership for Quality: Structured Support to Improve Care for Children with ADHD” and “Measuring Performance in Practice for the Care of Children with ADHD.”

- An article entitled “Chapter-Based Collaborations Improving Care for Children” will be published in the AAP News in June 2005.

- At least four manuscripts are anticipated:
  - Lazorick, Suzanne, Virginia L.H. Crowe, Judith C. Dolins, and Carole M. Lannon. “All Improvement is Local: Evaluating the Use of an Innovative, Multi-Faceted Intervention by a National Professional Organization to Translate its Guidelines into Practice.” Based on poster sessions at the Academy Health Annual Research Meeting and Child Health interest group, Boston, MA, June 27, 2005 and the NRSA Fellows meeting, Boston, MA, June 28, 2005; and a presentation at the AHRQ Translating Research Into Practice meeting, Washington DC, July 17, 2005.
  - Manuscript on practice changes in disease management as a result of participation in PFQ.
• Dr. Lannon discussed the PFQ project at three workshops at the AAP SuperCME meeting in Orlando, FL, April 29-30, 2004. In addition, Dr. Lannon outlined how the PFQ project can help residency-training programs meet the requirements of the ACGME competencies at the Association of Pediatric Program Directors meeting and at the Continuity Clinic Special Interest Group at the Ambulatory Pediatric Association.

• Dr. Lannon used multiple examples from PFQ in presentations to the AAP Annual Leadership Forum in August 2004 and the AAP Board of Directors, October 2004.

• At the AAP National Conference and Exhibition, November 1-5, 2003, Dr. Lannon presented a workshop: “Think Globally, Act Locally: Working with Chapters to Improve Quality of Care.”

5. Potential for Sustainability/Expansion after PFQ Grant Ends

It is likely that this program will continue after the end of the grant. AAP has hired a full-time staff person whose responsibility is to continue working with the state chapters on quality improvement initiatives. Plans are under way to develop additional eQIPP modules. At the August 2006 meeting, planning for an ongoing learning network for chapters was begun.

Also, the AAP chapters participating in PFQ have continued and expanded work begun in the PFQ project. Three of these chapters are continuing with the ADHD project and four have formed new partnerships to improve care for children with ADHD. Six chapters have gone on to design or implement other quality improvement projects. Three of these have secured additional funding and five have developed new partnerships to conduct quality improvement projects. As a result of participation in the PFQ project, six chapters have made other specific changes to promote a quality improvement focus. For example, the New Mexico AAP chapter received other grant funds to develop a quality improvement program focusing on obesity prevention, in partnership with the University of New Mexico’s Department of Pediatrics and the New Mexico Human Services Department.
PFQ GRANT SUMMARY
CLOSING THE GAP: PARTNERING FOR CHANGE

Lead Organization: American College of Physicians (ACP)
Partner Team: Northwestern University, Abington Memorial Hospital
Title: Closing the Gap: Partnering for Change
Topic Area: Process Continuing Medical Education to Improve Quality of Care
Principal Investigator: Vincenza Snow, MD
AHRQ Project Officer: Charlotte Mullican
Total Cumulative Award: $848,736
Funding Period: 9/02 – 9/05 (project funds not released until February 2003)
Project Status: Completed 9/29/06

1. Project Description

Goals. The aim of this project was to (1) develop and test a team-oriented, practice-based continuing medical education (CME) strategy that trains teams of doctors, nurses, and office administrators in how to improve quality of care and outcomes for patients with chronic diseases, and (2) design a business case that would help spread the adoption of team-oriented, practice-based CME by the ACP and other professional societies. The project team hoped to show that the new team-oriented, practice-based approach to learning would be a better way to promote physician adoption of clinical practice guidelines and improve quality of care for patients. The team also intended to establish this type of CME as a viable alternative to traditional CME, which is physician centered and based on passive learning. For this trial, the prototype CME learning strategy focused on educating physician practices on type 2 diabetes care.

Activities and Progress. In the first funding year (September 2002-September 2003), despite problems gaining IRB approval that delayed grant work by about six months, the project team established partnerships with key national stakeholders to create a project advisory board (see table for members). This group helped to design the education program and develop a training manual on learning collaboratives and a team-oriented toolkit for diabetes. Together, the training materials are called “Closing the Gap Diabetes Modules.”

The project also recruited four ACP practices in Pennsylvania and Illinois to participate in the pilot test of the practice-based learning model for diabetes. The pilot test began in October of the second funding year (October 2003-September 2004). Each practice that participated in the pilot project chose a team composed of one doctor, one nurse, and one administrator to attend three training sessions over a six- to nine-month period. One session was held on each of the following: performance improvement, the Plan-Do-Study-Act (PDSA) cycle, and the fundamentals of the Chronic Care Model. During this time period, the teams returned to their practices to train other staff and implement the team-oriented diabetes toolkit, which included clinical, administrative, and patient tools intended to redesign practice workflow. In between the three training sessions, the primary program trainer, Dr. Kevin Weiss of Northwestern University, held two conference calls lasting two hours with the practices to keep them on track and guide them through operational changes. Information from the pilot practices’ learning experiences, responses to barriers, and perceptions on how the team functioned differently informed revisions that the research team made to the trial intervention.

Following the pilot study, during the third funding year (October 2004-September 2005), the research team began to implement the pseudo-randomized trial intervention. The team successfully
identified and recruited 25 practices in Philadelphia (randomized into 13 intervention practices and 12 control practices) and 6 practices in Chicago (randomized into 3 intervention and 3 control practices) to participate in the study. Rather than conduct a true randomized trial, in which control practices would not receive training, the study design was changed to allow the control practices to receive the intervention as soon as the experimental practices completed the training program. This change was prompted by the insistence of one hospital system that had volunteered 25 internal medicine and family practices to the study and wanted all of them to benefit from it.

The first training session occurred in October 2004, and the intervention proceeded as it had in the pilot, except that the three full-day training sessions were reduced to one full-day and two half-day training sessions, and the training materials were revised to include only the most relevant and useful ones. The research team designed an evaluation to measure three sets of outcomes: (1) patient outcomes and practice patterns, (2) patient satisfaction, and (3) practice teams’ perceptions of the program. To collect patient outcomes and practice pattern data, each practice (both experimental and control) enrolled 15 patients with diabetes and extracted data on HbA1C levels, blood pressure levels, blood glucose, and lipid control from patient charts three times during the study. The practices sent this data to the Data Coordinating Center at Northwestern, where it was cleaned, analyzed, and used to create reports for each practice on its patients’ status at baseline, during the intervention, and afterward.

Data collection in the trial study was delayed by the slow pace of recruiting patients and extracting data from charts. By June 2006, however, the research team received all three rounds of data from the Philadelphia practices and about 80 percent from the Chicago practices. To collect patient satisfaction data, practices helped recruit patients with diabetes to participate in a telephone survey, which staff at Northwestern had planned to conduct three times during the study: before, during, and after intervention. However, because of problems enrolling patients in some practices, and errors in sending the correct consent forms to control groups in Philadelphia, the interviews were delayed. As of June 2006, the patient surveys were complete and researchers were analyzing the results.

2. Partnership Structure/Function

There were three levels of partnership in this project. The first involved ACP and Northwestern University, whose staff formed the core research team, including a project principal investigator from ACP and a co-investigator from Northwestern. This team spoke regularly and together designed the pilot test, the trial intervention, and the teaching materials. They also provided the training and support to practices, and collected and analyzed the data. The second partnership involved the ACP-Northwestern research team and the physician practices that participated in the pilot study and the trial intervention training programs. Practices had regular contact with Dr. Weiss at Northwestern, who provided them with ongoing technical support.

The third level of partnership involved the ACP-Northwestern research team and members of an advisory group, who provided input to the project’s design and teaching tools (Institute for Healthcare Improvement [IHI], Institute of Chronic Illness Care [ICIC]), offered avenues to disseminate outputs from the project, and facilitated participation of practice-based health providers (American Medical Association [AMA], AHIP, American Nurse Association [ANA]). In the first year, the project had one in-person advisory board meeting at which members could cement relationships and reach agreement on a conceptual model of the team-oriented, practice-based diabetes prototype. The project also created working groups – one on the business case and another on implementation and barriers – composed of advisory board members and other key partners. The project held mini-strategic planning teleconference calls with the working groups to develop different modules of the training program.
Table 1. Major Partner Organizations and Roles in the Project

<table>
<thead>
<tr>
<th>Organization</th>
<th>Role in Project</th>
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<tbody>
<tr>
<td><strong>Lead Organization</strong>&lt;br&gt; American College of Physicians&lt;br&gt; PI: Vincenza Snow, MD</td>
<td>• Provided overall leadership and direction to program; guided the design of CME intervention and training materials; developed and implemented training programs and developed evaluation plan on project impact; assessed opportunities for expansion and sustainability of project outcomes</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong>&lt;br&gt; Northwestern University&lt;br&gt; Co-PI: Kevin Weiss, MD</td>
<td>• Guided design of CME intervention and training materials; provided training and technical assistance to participating practices; collected and analyzed data for pilot test and randomized control trial</td>
</tr>
<tr>
<td>Institute for Healthcare Improvement</td>
<td>• Participated in advisory board; assisted in developing training materials for practices (training manual on learning collaboratives – IHI; toolkit for diabetes – IHI and ICIC)</td>
</tr>
<tr>
<td>Institute of Chronic Illness Care</td>
<td>• Participated in advisory board; assisted in identifying opportunities for dissemination of project outcomes and sustainability of project activities</td>
</tr>
<tr>
<td>American Medical Association and American Association of Health Plans</td>
<td>• Participated in advisory board; assisted in gaining participation from nurses by providing CE credit (ANA)</td>
</tr>
<tr>
<td>American Diabetes Association and American Nurse Association</td>
<td></td>
</tr>
<tr>
<td><strong>Target Organizations</strong>&lt;br&gt; Four practices from Pennsylvania and Illinois for pilot test (one was a Lehigh Valley practice in PA identified through another PFQ project)&lt;br&gt; 31 practices (experimental and control); 25 in Philadelphia and 6 in Chicago for trial intervention</td>
<td>• Participated in team-oriented, practice-based diabetes CME prototype; attended training sessions; participated in conference calls; implemented changes to practice workflow based on training; performed data extractions and sent data to the Data Coordinating Center; recruited patients for patient satisfaction survey</td>
</tr>
</tbody>
</table>

3. Project Evaluation and Outcomes/Results

The project successfully created a set of diabetes training modules for practice-based teams; pilot tested the module with 4 practices; recruited 35 practices (4 for the pilot and 31 for the trial) and patients from those practices to participate in the randomized control trial intervention; and gathered clinical trial data. While the research team did not have information at the time this summary was written (September 2006) on the impact of the program on patient clinical outcomes or patient satisfaction, it did complete the qualitative evaluation of the practice teams’ program experience and level of collaboration. The results showed that practices were willing to attend training in, learn from, and participate in the project’s team-based learning model, in spite of the cost involved in sending three employees to training sessions. The trial intervention had about an 85 percent participation rate from the experimental group, with 15 percent (about one to two practices) showing inconsistent participation.

The research team evaluated the practice teams’ experience and the level of team collaboration with a pre- and postintervention survey of the practices. Despite the intensity of this program, participants rated it highly, while at the same time complaining of the high intensity. Over the three training sessions, 94 percent of participants rated the program as “very good” or “excellent.” But “very good” to “excellent” ratings dropped from 96.7 percent of participants for sessions 1 and 2 to 88.2 percent for session 3, possibly reflecting fatigue. When asked what was the most “eye-opening experience” for them,
participants rated “working as a team” as the highest followed by “interacting with the other teams,” “learning improvement strategies,” and “reviewing their charts.” The first two relate to the in-person meetings, but the team interactions were also part of the conference calls and could be accomplished via an on-line community. Program participants rated the binder contents as most useful to learning, and within these, the care models, patient tools, and chart tools were of greatest value. They also rated the conference calls highly as a learning experience. Participants rated measuring their practice, progress reports on the conference calls, and patient satisfaction data as having the greatest impact on their ability to improve practice, followed by the binder materials and the learning sessions.

The project was found to be helpful to nurses and office managers. These practice staff indicated that the learning model helped to integrate them into the care process by opening up dialogue between physicians and staff. One physician practice noted that staff members felt a renewed sense of purpose because the project gave them tools for co-managing patients. Office managers often played a key role in the project at the practice level by keeping track of patients in the project.

The project established “face validity” for the learning model with physicians. Feedback and testimony from physicians were positive; some practices indicated that the program changed the way they practice by showing them the benefits of incorporating program tools, such as new forms and databases, into everyday workflow. For example, one practice introduced a scorecard that the nurse fills out with information on patient health status, diabetes care status, and instructions for self-care. The practice gives a copy of the scorecard to the patient and keeps a copy from which to enter patient data into its computer registry to track performance over time. Other practices made changes in office procedures, such as having nurses help patients take off their shoes as a reminder to physicians to check their feet, or instituted new patient education initiatives.

ACP and other organizations like the AMA and the American Board of Internal Medicine (ABIM) had positive reactions to the new CME model. Partly due to the success of the ACP project, which was part of an AMA pilot to test practice-based CME, the AMA decided to award 20 category 1 CME credits to physicians participating in practice-based programs like ACP’s Closing the Gap, and ACP is now accredited to provide practice-based CME. In addition, ABIM now accepts participation in ACP’s Closing the Gap as fulfilling part 4 of its requirements for Maintenance of Certification. The program was featured at an ABIM Quality Summit as a “premier project for the ACP in helping members achieve higher levels of quality care and become eligible for pay for performance projects” (ACP, Mid-Year Progress Report to AHRQ, June 2006). The ABIM considers Closing the Gap as the “gold standard” against which all other practice-based CME programs are measured. ANA also approved CE credit for nurses involved in the program. Finally, many ACP state and local chapters, which were initially hesitant to participate in the study, are now anxious to do so.

4. Major Products

- Closing the Gap Diabetes Modules, including a Manual on Learning Collaboratives for the practice teams, and a toolkit for diabetes care
- Summary report on the pilot test experiences and barriers
- Presentation of the project’s experiences at the ACP’s annual session in 2005
- News articles in ACP newsletters and electronic newsletters, distributed to 70,000 ACP members (see www.acponline.org/journals/news/may06/quality.htm)
- Patient data registries, scorecards, and other tools that practices created to track diabetic patients.
5. Potential for Sustainability/Expansion after PFQ Grant Ends

ACP’s Closing the Gap project led to larger projects that are further testing the team-oriented, practice-based learning model through follow-up pilots. The project has received funding from two pharmaceutical companies to conduct two more rounds of Closing the Gap training programs, one in diabetes (funded by Novo Nordisk for $9 million) and one in cardiovascular disease, with 20 practices in each group. Several physicians who received training in the initial study have become faculty for the new Closing the Gap programs and will teach the training sessions for new practices.

The research team is working to develop a sustainable business case and financing for the program. The two biggest costs to practices are those related first to measurement and workflow changes, and second to the time staff spends being trained. For ACP to expand this program, it also needs to find external funding. One option involves ACP’s charging fees for the program, supplemented by contributions from local and state partners of ACP chapters. ACP is also considering ways to build the program into its internal budget and create its own data coordinating center, but this would also require external funding. Finally, researchers are considering the development of a web-based version of the program that would be less costly and time-consuming for physicians—a “Closing the Gap 101” to teach the PDSA cycle—as a way to disseminate it more broadly. The more intensive training in this program would be the next step, a “Closing the Gap 102” that would concentrate on the practice improvement and measurement components.
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PFQ GRANT SUMMARY
IMPROVING CARE FOR THE DYING: TRANSFORMING PATIENTS’ WISHES INTO THE REALITY OF HIGH-QUALITY PALLIATIVE CARE

Lead Organization: American Hospital Association (AHA), Health Research and Educational Trust
Partner Team: Three Pennsylvania-based hospitals/hospital systems and four hospitals/hospital systems based outside Pennsylvania (national)
Title: Improving Care for the Dying: Transforming Patients’ Wishes into the Reality of High-Quality Palliative Care
Topic Area: Palliative Care
Principal Investigators: John Richard Combes, President and Chief Operating Officer, Center for Healthcare Governance, AHA
AHRQ Project Officer: Ronda Hughes
Total Cumulative Award: $1,282,703
Funding Period: 9/02–9/06
Project Status: Completed 9/29/06

1. Project Description

Goals. This project sought to promote the establishment of hospital-based palliative care by creating centers of learning for other hospitals, and to accelerate the translation of research findings into improved quality and delivery of end-of-life care. In phase I, the project planned to establish three palliative care learning centers at Pennsylvania-based hospitals to host site visits by other hospitals interested in planning and developing similar palliative care units. In phase II, the project planned to expand the number of learning centers to hospital-based palliative care centers in other parts of the country, selected from among recipients of the AHA’s Circle of Life Award.

Activities and Progress. The first six months were devoted to planning and developing the core curriculum of the site visits with the initial three learning centers in Pennsylvania: Geisinger Health System, Danville; Center for Palliative Care in Thomas Jefferson University’s Department of Family Medicine and the Jefferson Health System, Philadelphia; and the University of Pittsburgh Medical Center.

Phase I began during the second half of year 1 and expanded into year 2. The project aimed for each of the three facilities to accommodate five site visits the first year and eight site visits per year for years 2 through 4, for a total of 29 site visits at each. During year 2, phase II began with the establishment of four national learning centers (Connecticut Hospice in Branford, CT; Detroit Receiving Hospital in Detroit, MI; Palo Alto VA in Palo Alto, CA; and St. John’s Regional Health Center in Springfield, MO). The four were chosen among AHA Circle of Life Award winners and finalists, and represented different types of settings for palliative care (i.e., VA hospital, safety net hospital, Catholic hospital, and hospices).

The lead organization (initially Hospital and Health System Association of Pennsylvania) recruited hospitals or hospital systems to participate in site visits and matched up visitors with the learning centers. The learning centers contacted the hospitals to schedule the site visit and to conduct a preliminary needs assessment, in which staff members were interviewed to assess their unique clinical and community situation, areas of interest, and palliative care goals. During the visit, discussion was guided by the data gathered during these pre-site interviews. The learning centers tailored the site visit curriculum and schedule to the visitors’ identified needs. After the site visits, the lead organization followed up with the
visiting hospitals to assess the effectiveness of the site visit and provide ongoing support and technical assistance.

As of early October 2006, approximately 60-70 site visits had been conducted. Site visits lasted a full day and were hosted by a team of professionals, including physicians, a palliative care project coordinator, nurse clinicians, hospital administrators, clergy, social service professionals, and volunteer coordinators. Members of the host organization team provided tours of the facility, supplemented by formal and interactive presentations. Each site visit included a presentation on how the research collected during the developmental stages in regard to challenges and successes was translated into improved palliative care services and procedures. The host team encouraged visitors to share their research findings and solicit approaches to translating them into successful practices. Discussions focused on how to ensure that systemic change, including policy change, occurred, and on how to create a supportive environment so that established palliative care services could be sustained. Host organizations shared data used for benchmarking, internal and external marketing strategies, reimbursement and funding challenges, outcome measurements, evaluation process, and views of how systemic change holistically influenced the delivery of health care within their organization.

2. Partnership Structure/Function

During the initial planning phase, the three Pennsylvania-based hospitals/hospital systems spoke with the principal investigator (PI) by phone every other week and in person once per quarter to build the site visit curriculum. The PI, project director, and seven learning centers (called “learning labs”) did planning via conference calls held approximately every six weeks. These conversations provided the team with the opportunity to evaluate the effectiveness of the program process, brainstorm on continued marketing and training strategies, and continue group discussion and work on collaborative projects such as survey development and refinement of curriculum and site visits. In addition, member listserves, the Hospital-Based Palliative Care Consortium Hospital-Based Palliative Care Consortium website, and conference calls facilitated communication between the lead organization, participating hospitals, and learning labs.

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<thead>
<tr>
<th>Table 1. Major Partner Organizations and Roles in the Project</th>
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<tr>
<td><strong>Organization</strong></td>
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<tr>
<td>Lead Organization (grant recipient)</td>
</tr>
<tr>
<td>• To provide overall project leadership</td>
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<tr>
<td>• To identify and recruit learning labs</td>
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<tr>
<td>• To develop core curriculum for the site visits and companion toolkit</td>
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<td>• To recruit participating hospitals (through websites, electronic newsletters, learning lab institution publications, and various meetings and conferences)</td>
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<tr>
<td>• To develop assessment tools to evaluate the usefulness of the learning labs for the visiting/participating hospitals</td>
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<tr>
<td>Key Collaborators</td>
</tr>
<tr>
<td>• To assist in developing the core curriculum for the site visits and companion toolkit (Phase I hospitals/hospital systems only)</td>
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<tr>
<td>• To conduct and assess pre-site-visit surveys filled out by the visiting hospitals/hospital systems</td>
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<td>• To coordinate and host site visits</td>
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Table 1 (continued)

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<th>Key Collaborators (continued)</th>
<th>Organization</th>
<th>Role in Project</th>
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<tbody>
<tr>
<td>Phase II: Palliative care programs based at 4 hospitals and hospital systems (national)</td>
<td>• To respond to follow-up questions/inquiries from visiting hospitals</td>
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</tbody>
</table>
| Target Organizations | Hospitals and hospital systems throughout the U.S. | • To complete pre-site-visit assessment  
| | | • To visit learning labs and adapt evidence-based models of change to incorporate palliative care services into hospitals/hospital systems |

3. Project Evaluation and Outcomes/Results

The program planned to evaluate its success according to the number of new hospital-based palliative care programs created in targeted hospitals, and the number of enhancements made to current programs as a result of the training program. About 60-70 site visits had been completed at the time this summary was written (October 2006). Initially, the evaluation intended to measure outcomes such as reduced length of stay, patient and family satisfaction, and the financial effects of instituting hospital-based palliative care services. However, the learning labs were concerned about measuring patient satisfaction. Specifically, they felt that while those patients and families who participated in the palliative care program would report positive effects, patients and families who did not receive palliative care services might skew the results. As a result, the three Pennsylvania pilot hospitals serving as learning labs provided only baseline clinical and financial data prior to the initiation of phase I. During phase II, AHA-HRET staff surveyed state and national learning labs to evaluate the impact of the palliative care programs on these outcomes. These data will be compared to the baseline data collected from the three Pennsylvania-based learning labs prior to phase I.

In addition, AHA-HRET staff conducted followup with visitors approximately six months to one year after the site visit to explore whether expectations were met, what was learned from the visit, what new services were developed as a result, how services were functioning, etc. Project staff planed to analyze this information at the end of summer 2006 (as of October 2006, we were unsure if this was completed as scheduled).

The project has also produced less tangible but nonetheless important lessons. For example, many hospitals have been reluctant to adopt the program because revenues are reduced if people spend less time in the hospital, even though use and cost of inappropriate services are also decreased. One of the learning labs taught visitors how to capture allowable charges. The project also found that each set of stakeholders – hospital CEOs, CFOs, physicians, and nursing staff – have different concerns that need to be addressed to gain their support for a palliative care program.

4. Major Products


2 A similar program, the Center to Advance Palliative Care (CAPC) at Mt. Sinai Hospital in New York, funded by the Robert Wood Johnson Foundation, used a similar approach to promote hospital-based palliative care programs. It targeted larger hospital systems and university-based hospitals, however, whereas this AHA-HRET program targeted smaller community hospitals, VA hospitals, and safety net hospitals. Also, CAPC charged hospitals to participate in its learning programs, while AHA-HRET did not.


5. Potential for Sustainability/Expansion after PFQ Grant Ends

While there is no funding in place for sustaining this project, it is possible that some learning labs will continue to host scaled-down versions of the site visits, if approached by hospitals/hospital systems. It is also possible that something may arise from AHA policy leaders’, concerns about the disproportionate amount spent on end-of-life care, AHA leadership have discussed support for palliative care as a way to reduce that spending but have not taken any steps towards this, other than the Circle of Life Awards.
PFQ GRANT SUMMARIES

EFFECTING CHANGE IN CHRONIC CARE: THE TIPPING POINT

Lead Organization: American Medical Association (AMA)
Partner Team: Iowa Foundation for Medical Care (IFMC), Northwestern University, Cook County Bureau of Health Services, United Healthcare Group (UHC), Midwest Heart Specialists (MHS), Pittsburgh Regional Healthcare Initiative (PRHI) and others
Title: Effecting Change in Chronic Care: The Tipping Point
Topic Area: Improving care processes and outcomes for chronic conditions
Principal Investigators: Karen Kmetik, PhD
AHRQ Project Officer: Cynthia Palmer
Total Cumulative Award: $1,211,074
Funding Period: 9/02–9/06
Project Status: Completed 9/29/06

1. Project Description

Goals. The goal of this project was to achieve a “tipping point” in quality improvement in caring for patients with chronic illness—specifically adult diabetes, coronary artery disease (CAD), and major depressive disorder (MDD)—by advancing the widespread use of physician performance measures in various settings. The primary interventions/tools for the project are measures developed by the Physician Consortium for Performance Improvement, which is convened by the American Medical Association (AMA), and the National Diabetes Quality Improvement Alliance.

The project originally aimed to test two approaches to collecting data on physician performance. One would establish a regional data warehouse for pooling payer claims data (United, Blue Cross, and CMS) in the Pittsburgh area and allow physicians to retrieve the data to assess their own performance (the “Community Model”). The other involved the electronic transfer of data from physician offices and laboratories to a central data repository in the Midwest (the “Practice Model”). The project planned to examine the impact of the two models on improved care processes and outcomes, identify implementation issues and challenges, and determine what would be necessary both to roll out the models nationwide and sustain participation by key partners.

Activities and Progress

Year 1. In the first year, the project standardized the performance measures and tools for diabetes, CAD, and MDD, and began to pilot test two different models that could be used to provide physicians with performance measurement data at the point of care. The Pittsburgh Regional Healthcare Initiative (PRHI), one of the project partners, began to test the Community Model, which would compile data from health plans, laboratories, and a QIO to “pre-populate” a community data registry for physician retrieval. The Iowa Foundation for Medical Care (IFMC), another project partner, began to test the Practice Model, in which physician practices would generate data and send the information to a QIO or health plan for quality oversight purposes. Both models used the agreed-upon standardized performance measures.

PRHI secured the commitment of five primary care physician practices with a total of 111 physicians providing care to more than 250,000 patients to participate in the pilot test. PRHI met with practicing physicians, health plans, and laboratories to identify data capabilities and then secured preliminary agreements from some payers for integrating data from multiple sources into a regional community
database called the Pittsburgh Health Information Network (PHIN) overseen by the Pennsylvania QIO. Physicians would be able to access patient data stored in the registry in standardized reports.

IFMC secured the participation of four cardiology practices, a family medicine practice, and an internal medicine clinic; 79 physicians from the cardiology practices agreed to collect data for the CAD measures and 22 family practitioners, and 2 PAs and 3 internists agreed to collect data for the MDD measures. An assessment of the practices’ current data capabilities found that the practices were at various stages of implementing electronic health record systems (EHRS). The four cardiology practices collected baseline data and initiated ongoing collection of patient data.

**Year 2.** In the second year, IFMC’s arm of the project progressed; the practices that used EHRS successfully integrated the CAD performance measures into their systems. The paper-based practice sites struggled to integrate data collection into routine care, highlighting the significant advantage afforded to EHRS users in entering and retrieving treatment data, and in managing the care of patients. Based on this experience, the project decided to focus exclusively on the collection and reporting of data electronically, either using a data registry or the EHRS.

**Year 3.** Problems in implementing the PRHI community model that emerged in year 2 caused this component to be discontinued in the third project year. Project leaders failed to secure the participation of the University of Pittsburgh Medical Center Health Plan and CMS to contribute to the data warehouse because of legal concerns about data privacy. Without these vital sources of clinical data for the registry, the PHIN was not likely to be widely used in the community. In addition, the project did not have enough financial resources to build the health information network, technical problems emerged in its design, and doubt arose about the usability of the system by physicians.

While work on the Community Model ended, the project realized that expansion of the Practice Model would be needed to truly reach a “tipping point” in improving the care of patients with chronic illness. Thus, the project expanded its activities to (1) include more practice sites (e.g., community clinics) with different EHR systems, (2) demonstrate the validity of physician performance data collected, and (3) provide concrete examples of both the data extraction process from physician offices’ EHRS and the exportation of the data to other private and public users.

Two new partners were brought on board to allow for this expansion in the project work. The project partnered with Cook County Bureau of Health Services to conduct a disease registry pilot to show how quality measures could be integrated into a commercial electronic disease registry system (DocSite) that would allow for data collection, monitoring and improvement of patient care, and provision of population-based feedback reports to participating physicians and clinics. Northwestern University came on as a partner to work on a data validity pilot to implement and validate heart failure (HF) measures for an existing commercial EHRS (EPIC). Midwest Heart Specialists (MHS), a large cardiology practice that was already involved in the project, worked with IFMC and United Healthcare (UHC) to begin a data export pilot that involved extracting data from an EHRS and exporting it to IFMC and UHC, using the HL7 file format which has been endorsed by HHS and CMS as the federal messaging standard.

**Year 4.** The final project year focused on publication of results from the performance measures testing, validation work, and other implementation efforts, as well as meetings to discuss the significance of the work and how it could be sustained through, for example, the AMA’s Cardio-Health Information Technology (HIT) project.
2. Partnership Structure/Function

AMA served as the leader or convener for this partnership, which involved many different organizations over the course of the four-year project. Partners included payers (United Healthcare, CMS, and BCBSA), physician groups, a QIO, a community health care coalition, an employer health coalition, and a county-based system of ambulatory care clinics. AMA organized the partners’ resources into one or more of the project components and contracted with some partners to support the work. AMA also convened all-partner meetings via monthly phone calls as well as annual in-person meetings to share progress reports and lessons learned. As the project progressed, all-partner phone calls continued to occur at least quarterly but have begun to taper off as project activities began to wind down and partners became involved in spin-off projects.

Of the initial project partners, PRHI and MBGH ended their involvement in the project either because their part of the work came to an end or the organization’s priorities changed. United Healthcare, Northwestern University, and Cook County’s Bureau of Healthcare Services came on as partners in later years of the project as work expanded.

Table 1. Major Partner Organizations and Roles in the Project

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<th>Role in Project</th>
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<tbody>
<tr>
<td><strong>Lead Organization</strong> (grant recipient)</td>
<td>American Medical Association (AMA) • Lead and coordinate the project, provide the evidence-based performance tools and interventions</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong></td>
<td>Pittsburgh Regional Healthcare Initiative (PRHI) - ended participation when the Pittsburgh Health Information Network failed to become operational • Regional partner that served as the lead for testing the Community Model; identified and recruited physician practices to participate in pilot testing</td>
</tr>
<tr>
<td></td>
<td>Iowa Foundation for Medical Care (IFMC) (QIO for Iowa and other states) • Regional partner served as the lead for testing the Practice Model; tested information tools for CAD and MDD; identified and recruited physicians practices to participate in pilot test; involved in data export pilot with MHS and UHC</td>
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<td></td>
<td>United Healthcare/Ingenix • Involved in data export pilot with IFMC and UHC</td>
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<tr>
<td></td>
<td>CMS and Blue Cross and Blue Shield Association • “Connectors” to other organizations to promote dissemination grantee efforts</td>
</tr>
<tr>
<td><strong>Target Organizations</strong></td>
<td>3 ambulatory care practices or networks in the Chicago region: Midwest Heart Specialists (MHS); Northwestern University General Internal Medicine/Medical Faculty Foundation; Ambulatory and Community Health Network/Cook County Bureau of Health Services • Participate in the pilot tests of information technology and tools to assess adherence to performance measures for chronic diseases</td>
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3. Project Evaluation and Outcomes/Results

The project learned through the Practice Model that getting physicians to use performance measures to improve care worked best in practices that had an existing EHRS. According to the RAND evaluation report after the third project year, AMA came to recognize that achieving a “tipping point” in advancing widespread use of physician performance measures requires (1) involving more practice sites in collecting data through different types of electronic health record systems, (2) demonstrating the validity of physician performance data that are collected, and (3) showing how the data extracted from physician office EHRS can be easily exported to a wide array of public and private users.
The interim RAND evaluation report, however, stated that the project’s experience has not addressed some challenges faced by physician practices that want to take advantage of current technologies to measure their performance against AMA quality standards: (1) how to incorporate the Consortium’s measures in physician office-based EHRS so that data on the measures can be generated by the system, and (2) exporting the data to a health plan or other party in a useable fashion. The evaluation indicated that the experiences of the three pilots—disease registry, data validation pilot, and data export pilot—are inconclusive on both these issues. However, physician offices and clinics using the Consortium’s measures in EHRS and disease registries report that they have seen, at least to some degree, process improvements and positive patient outcomes. While these results cannot be definitively attributed to use of the Consortium’s measures, the RAND evaluation concluded that it is reasonable to believe the measures had at least some positive marginal impact.

Individual results from the three pilot studies include:

- Data export pilot—After experiencing difficulty with the data format, MHS successfully transferred a data file with “dummy” clinical performance data. One of the organizations receiving the data viewed the pilot project as successful since it demonstrated the ability to export clinical performance data from an EHRS to a QIO. However, the other organization that received the data did not view the pilot project as positively due to the problems it encountered with the format of the data that was transferred, which made it less useful to them.

- MHS successfully integrated Consortium measures into home-grown EHRS and has begun to provide tracking reports from data collected on Consortium measures to practice physicians. Validity testing for the Consortium measures was ongoing and a manuscript of results was in development as of June 2006.

- Data validation pilot—The Northwestern team has been able to integrate Consortium measures into its commercial EHRS and generate performance data using HF measures and CAD measures. Northwestern has been focused on educating their physicians on how to document and enter patient information into the system and are working on process and workflow redesign. Eventually, they hope to provide physicians with performance reports. Northwestern’s validation work has helped the AMA refine its sets of HF and CAD measures. Two papers on the results of the validation pilot have been written and submitted for publication.

- Disease registry pilot—Cook County has integrated the Consortium’s asthma and the Alliance’s diabetes measures in a commercial electronic disease registry. Participating ambulatory clinics have begun to use the measures to do population-based care management. While the measures have been fully integrated in the disease registry, inputting necessary data into the system remains a work in progress. The RAND evaluation indicated that the measures have positively impacted physicians in the nine participating primary care clinics. Many of the physicians report that the registry has helped them provide higher level of care, as evident in improving performance measures, decreasing number of patients in the high-risk group and increasing number of patients in the low-risk group. Cook County is working to link its disease registry in its ambulatory setting to its commercial EHRS in its inpatient setting.

Another important result of the project was a June 2006 meeting convened by AMA with 25 electronic medical record vendors, CMS, and a Northwestern co-investigator to discuss improvements that could be made to electronic health record systems and products, which would make it easier for physician practice use.
4. **Major Products**

   
   - Two papers written by Northwestern that have been submitted for publication
   
   - A paper being written by MHS
   
   - A paper being written by Cook County RAND’s third-year evaluation of the project

5. **Potential for Sustainability/Expansion after PFQ Grant Ends**

   The success of MHS in implementing the Consortium’s CAD measures in an EHRS launched a follow-on project called “Cardio-HIT—Physicians Advancing HIT to Improve Care”, which was also funded by AHRQ and led by the AMA and MHS. The three-year project plans to spread the MHS model to six other physician practice sites in four different regions, using different EHRS systems. The project hopes to establish a data warehouse to enable feedback reports and benchmarking to support physician-directed quality improvement. The seven practices will also work to integrate other Consortium measures into their systems. AMA also recently received a two-year grant from the Physicians Foundation for Health Systems Excellence, to continue working with MHS and Northwestern and add four more sites, each with different electronic record systems. Thus, the partnerships established between the AMA, Midwest Heart Specialists, and Northwestern will continue with these two projects.
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Final – October 2006

PFQ GRANT SUMMARY
LONG TERM CARE QUALITY IMPROVEMENT PARTNERSHIP

Lead Organization: American Medical Directors Association Foundation (AMDA-F)
Partner Team: Quality Partners of Rhode Island; 20 national organizations represented in the National LTC Quality Coalition, and state or local chapters
Title: Long Term Care Quality Improvement Partnership
Topic Area: Improve implementation of AMDA Clinical Practice Guidelines for pain management and pressure ulcer reduction in long-term care (LTC) nursing facilities
Principal Investigators: David Polakoff, MD, MSc, CMD, Senior Vice President and Chief Medical Officer, Genesis HealthCare Corporation. Co-PI is David Gifford, MD, MPH, formerly with Quality Partners of Rhode Island, the QIO support center for CMS’ nursing home quality improvement initiative, and currently Director, Rhode Island Department of Health
AHRQ Project Officer: Judy Sangl, ScD
Total Cumulative Award: $1,299,164
Funding Period: 9/02 – 9/06
Project Status: Completed 9/29/06

1. Project Description

Goals. This project sought to determine the effectiveness of an approach for training nursing home staff to implement clinical practice guidelines developed by the American Medical Directors Association (AMDA), and to evaluate nursing homes’ experiences and lessons learned in using implementation toolkits. The specific goals of the project were to (1) develop a Long-Term Care Quality Improvement (LTC-QI) partnership that will enhance the quality of care and quality of life for nursing facility residents; (2) create national and local partnerships with LTC professional organizations, Quality Improvement Organizations (QIOs), long-term care facilities, and a national research network of more than 200 nursing facility medical directors to disseminate toolkits that translate AMDA clinical practice guidelines (CPGs) into practice; (3) identify and train interdisciplinary educators and mentors in six states to provide onsite CPG and CPG toolkit implementation training for 5 to 10 nursing facilities in each state (50 total); (4) collect and/or analyze data on both process and clinical indicators in the participating facilities to determine the effectiveness of the CPG implementation model and identify how it can be replicated independently in nursing homes; and (5) disseminate the model and refined toolkits in both online and print versions.

Activities and Progress. During the first year, the project created the National Quality Coalition, consisting of 15 partners, including representatives of nursing home associations (AHCA and AAHSA), the national QIO association (AHQA), AMDA members, and other key stakeholders. The Coalition advised the project on criteria for nursing homes participating in the project, strategies to recruit nursing facilities, which states to target, and other key design and implementation issues. Six states were selected for the project: California, Florida, Indiana, Ohio, Pennsylvania, and Texas.

The project leadership team (the PI and Co-PI, AMDA Foundation staff, and Quality Partners of Rhode Island) selected two CPGs—pain management and pressure ulcer reduction—as the focuses for CPG implementation. These clinical topics had been targeted for nursing home improvement nationally by CMS and were publicly reported on CMS’ Nursing Home Compare website. Quality Partners helped to develop a plan for project implementation, specified indicators of CPG implementation, selected data
elements for program evaluation, and created a “readiness matrix” to select participating nursing facilities.

In the second year, facility recruitment began, and the selected long-term care facilities designated project teams consisting of the nursing home administrator, medical director, director of nursing, a data liaison, and others. These teams participated in short (one day or less) training programs, run by state nurse consultants who were themselves trained by the AMDA Foundation Project Coordinator and Quality Partners staff. Training consisted of review of the two guidelines, and guidance on how to initiate and manage organizational changes to promote adherence. AMDA developed CPG implementation toolkits that included sample letters/memoranda to staff. The implementation training program was piloted during the 2004 AMDA symposium, and the implementation program and CPG toolkits were piloted with six facilities in Pennsylvania. In the pilot state of Pennsylvania, CPG implementation training was provided jointly to all participating teams, but in other states, nurse coordinators provided (to the extent possible) facility-specific training sessions for staff teams.

The project team encountered unexpected problems and delays in recruiting facilities, which led to the loosening of some participation criteria, extension of recruitment areas to entire states rather than metropolitan regions, and allowing “rolling” enrollment. The project developed a web-based data reporting system and began collecting baseline data from participating facilities. Data on the CPG implementation process were to be collected at 11- and 18-weeks post-training, whereas data on clinical measures were to be collected at baseline, and at 9- and 15-months post-training.

Program staff and partners in the National Quality Coalition made efforts to marshal support from state and local chapters of the national organizations to assist change in participating facilities, but generally were not successful due to limited capacity on the part of state and local chapters. By the beginning of the fourth year (October 2005), 54 facilities had been recruited, but some dropped out before receiving training or submitting baseline data, and others withdrew from the study due to changes in management or failure to submit follow-up data. In April 2006, 40 facilities were formally enrolled in the project and are expected to submit data for the evaluation.

2. Partnership Structure/Function

The project leadership team included AMDA, AMDA Foundation and its Research Network, and Quality Partners. The team held frequent conference calls and meetings. The National Quality Coalition had annual meetings and, in the first year or two, quarterly conference calls, during which they provided input to the Leadership Team on project design issues. On a more informal basis, they communicated with state chapters and affiliates about the project, identified individuals in the selected states to serve as trainers; and provided forums at their national or state meetings to educate members about the project and recruit facilities for participation. The national partners also disseminated information about project activities through publications, websites, and listservs. The original plan called for the identification of existing state and local coalitions to assist with recruitment of facilities and support dissemination of the toolkits and CPGs once the study was complete. Existing coalitions (or ‘ready’ coalitions) were to be identified in each of the six states, and were to play an active role in each phase of the study. Instead, only a few isolated local chapters of the national organizations in some of the states offered assistance to the participating facilities and teams.
Table 1. Major Partner Organizations and Roles in the Project

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<tr>
<th>Organization</th>
<th>Role in Project</th>
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<tr>
<td><strong>Lead Organization</strong> (grant recipient)</td>
<td><strong>AMDA Foundation (Janet Pailet, Project Director)</strong></td>
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<td></td>
<td>• Overall grant management; coordinate implementation of activities at the local level, including CPG implementation; create communication and dissemination plan</td>
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<td><strong>Key Collaborators</strong></td>
<td><strong>AMDA</strong></td>
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<td></td>
<td>• Provide clinical and executive leadership; work with CPG Steering Committee to create toolkits for pain and pressure ulcers; foster local partnerships</td>
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<td></td>
<td><strong>AMDA Foundation Research Network</strong></td>
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<td>• Support for evaluation component (implementation and data collection at facilities)</td>
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<td></td>
<td><strong>American Health Quality Association</strong></td>
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<td></td>
<td>• Liaison to QIOs – provide info about project and facilitates participation; holds forums for training and disseminating info</td>
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<td></td>
<td><strong>Quality Partners of Rhode Island</strong></td>
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<td></td>
<td>• Subcontract for Technical Assistance; oversee evaluation and analysis of implementation in participating facilities</td>
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<td></td>
<td><strong>National LTC Coalition (15 partners)</strong></td>
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<td></td>
<td>• Advise the project on criteria for nursing homes participating in the project, strategies to recruit nursing facilities, which states to target, and other key design and implementation issues</td>
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<td><strong>Target Organizations</strong></td>
<td><strong>40-50 nursing homes in 6 states (CA, FL, IN, TX, OH, and PA)</strong></td>
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<td></td>
<td>• Receive CPG implementation training and submit data to evaluate changes in processes of care and outcomes, as well as resource utilization</td>
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3. **Project Evaluation and Outcomes/Results**

   The project collects process of care data through a web-based system and examines clinical outcomes. A separate, non-web based data collection effort gathers information about the CPG implementation process, including the amount of staff time spent on different tasks, the number of staff on the implementation team, compliance with each phase or component of the implementation process, and usefulness of the toolkit elements. No preliminary results were available when this summary was written (October 2006).

4. **Major Products**

   A manuscript, “Strategies for overcoming barriers to recruitment and enrollment of nursing homes in a national clinical practice guideline (CPG) implementation study” is in final preparation, and plans include manuscript development after data analysis is completed. Articles about the project and the pilot states appeared in state LTC association newsletters, trade journals and newsletters, and a few local newspapers. Project staff also wrote and issued a monthly e-mail newsletter, distributed to about 35 individuals and organizations, including those on the National LTC Quality Coalition.

5. **Potential for Sustainability/Expansion after PFQ Grant Ends**

   The CPG implementation process is designed to be sustainable, in that the intervention involves only a modest amount of initial training and consultation by the state nurse coordinators. For facilities that wish to implement CPGs, AMDA sells an implementation manual, which is available to any nursing facility at a modest price. But the motivation for using the CPG implementation manual and toolkits depends on evidence showing that their use contributes to tangible improvements in quality of care measures. Those who received training to be CPG implementation trainers also may be resources for the state QIO or other nursing homes that wish to utilize their expertise. Those QIOs that were involved in the project in the six states are more likely to promote this approach as part of their overall nursing home quality improvement activities.
The National Quality Coalition established by the project involves organizations whose mission includes promoting quality of care improvements in long-term care facilities. Although the coalition itself may or may not last beyond the end of the project, communication and coordination among the members are likely to continue regarding related activities. At the end of the AHRQ grant period, the project was testing the feasibility of transitioning the NQC to a Research Advisory Board for the AMDA-Foundation Research Network.
PFQ GRANT SUMMARY
CALNOC PARTNERS FOR QUALITY TRIP TO REDUCE PATIENT FALLS

Lead Organization: Association of California Nurse Leaders and California Nursing Outcomes Coalition (CalNOC)
Partner Team: UCSF, Cedars-Sinai Research Institute, American Nurses Association:California, California State University at Fullerton
Title: CalNOC Partners for Quality TRIP to Reduce Patient Falls Project
Topic Area: Reduction of patient falls in hospitals
Principal Investigators: Nancy E. Donaldson, DNSc
AHRQ Project Officer: Denise Burgess (formerly Marge Keyes)
Total Cumulative Award: $1,160,856
Funding Period: 10/02 – 9/06
Project Status: Completed 9/29/06

1. Project Description

Goals. The aim of the four-year project was to use evidence on effective practices and data from the California Nursing Outcomes Coalition (CalNOC) statewide data repository to support interventions to reduce the incidence of patient falls and the severity of fall-related injuries in California hospitals. The project builds on CalNOC’s efforts to engage acute care hospitals in voluntarily reporting standardized data for nurse staffing, patient falls, and fall-related injuries based on American Nursing Association (ANA) quality indicators. This project was designed to advance CalNOC’s efforts to use its quality benchmarking infrastructure to expedite the transfer of evidence-based knowledge into practice and so improve patient care quality and safety.

The project planned to recruit hospitals from CalNOC’s membership network and help them set an agenda for reducing patient falls. Rather than select a standard intervention for all participating hospitals, the project helped each facility choose an intervention for decreasing patient falls that fit with its organizational strategic priorities. To support these interventions, the project would pair a “Coach” from the Project Team with a “Linker” in each hospital. The project also assisted hospital nursing staff in accessing research-based evidence to support their strategic falls reduction efforts.

Activities and Progress

Year 1. The project held a strategic planning retreat with the Project Team—a core research group of individuals/organizations—and 20 statewide stakeholders to discuss strategic planning and designate subgroups to implement its plan. The project staff aggregated falls-related data from CalNOC’s data repository and synthesized information to identify opportunities for improvement in falls risk assessment, prevention, and injury reduction. The Project Team issued a call to CalNOC’s member hospitals to participate, received interest from 32 of them, and began collecting baseline data from these hospitals, which they planned to use to compare indicators from participating and non-participating units. The Project Team developed role descriptions for Coaches and Linkers, with key competencies and expectations, project orientation content and strategies, and coaching documentation tools. Project staff provided coaching for the hospital Linkers by six Coaches from the Project Team of investigators, and a staff coaching coordinator for the state’s southern region.

Year 2. The project recruited 92 medical/surgical patient care units in 32 CalNOC hospitals to participate in the three-year demonstration (the total was 91 after one unit dropped out later). The medical/surgical units conducted self-assessments on patient falls, and the Project Team engaged sites in
a comprehensive review of the CalNOC falls data. The project initiated its telephone-based educational and supportive coaching intervention by identifying Linkers in each hospital and pairing them with one of the project’s Coaches. The Coaches scheduled telephone meetings with their Linkers about once a month to discuss each hospital’s strategic plans, follow their progress, and discuss Linkers’ needs. The roles of the Linkers and the hospitals’ strategic plans varied to match individual organizational needs, since some hospitals already had strategic initiatives for patient falls in place and others did not. Telephone contacts were complemented by site visits when requested, and evolved to include multi-site conference calls for regional networking.

The project funds also partially supported the creation of the CalNOC website, which went live in August 2003. It provides general information about CalNOC member hospitals and representatives and contact information for CalNOC’s committee members. It also has tools specifically designed for members involved in the falls reduction project, such as a bulletin board for posting questions and responses, and an eReserve library that posts curriculum materials.

**Year 3.** The project Coaches continued to support Linkers’ efforts to implement evidence-based interventions for reducing the incidence and injury associated with patient falls in medical-surgical units. Hospitals set their own agendas and areas of focus; some hospitals developed general strategies, while others focused on one or two focal areas for improvement. The project provided hospitals with self-assessment tools in Years 1 and 4 to document their progress.

The six project Coaches and the coaching consultant, Dr. Kristin Geiser, held monthly conference calls to learn from each other and optimize the effectiveness of individual and collective efforts. The Falls Medication Assessment Fact Sheet emerged from one of these conference calls, and was distributed to Linkers to help them integrate emerging concepts related to medication assessment into their fall risk assessment activities. Dr. Patricia Quigley RN, PhD, an expert in falls based at the VA Tampa, joined the team as a consultant and participated in calls with the coaches to discuss the impact of medication assessment on falls risk assessment/prevention. Coaches documented the monthly contacts with Linkers using a coaching documentation worksheet, which will inform the descriptive analysis of the Coaching intervention.

**Year 4.** The last year of the PFQ grant focused on completing a formative evaluation of the project, with pre- and post-analyses comparing data from participating and non-participating units in participating hospitals. The project also sought evaluation feedback from Chief Nursing Officers at these hospitals. The project uses the CalNOC website to provide ongoing updated “drill down” reports to assist sites in using their own performance as the basis for guiding ongoing efforts. The project began exploring ways to disseminate its work through a web-based version of the intervention via ANA’s NDNQI website.

2. **Partnership Structure/Function**

The PFQ project was spearheaded by CalNOC, a coalition of nursing organizations in California, founded in 1995 by the Association of California Nurse Leaders (ACNL)—which serves as the PFQ grantee—and the American Nurses Association of California (ANAC). CalNOC was formed to develop clinical outcome quality indicators for hospital-based nursing processes and conduct research on efforts to improve them. The PFQ project structure was built around the existing CalNOC governance and committee structure and had three levels of partnerships. The first level of partnership is between the core Project Team, comprised of the individuals in CalNOC’s Operations and Research teams and outside CalNOC Operations Team consists of staff from the UCSF Center for Research and Innovation in Patient Care, the Association of California Nurse Leaders (ACNL), the Cedars-Sinai Research Institute, and representatives of the CalNOC User Members. Key CalNOC personnel (Dr. Donaldson at UCSF, Dr. Aydin at
consultants brought in for their expertise. The second partnership occurs between the project and the 32 participating hospitals. A third level of partnership exists between the Project Team and the national experts and stakeholders that make up the Advisory Council, which helps to shape the project’s methods, measures, and strategies.

For the core Project Team, frequent meetings were held between Principal Investigator Dr. Donaldson with UCSF and the grant recipient ACNL’s Executive Director, Patricia McFarland, to discuss grants administration, since this was ACNL’s first federal grant. The core Project Team, led by the PI and her two co-investigators at Cedars Sinai Research Institute and California State University at Fullerton, had weekly phone calls and met in person about five times a year. Strategy meetings with other project collaborators—including the investigative and coaching teams—occurred every four to six weeks via conference calls during the implementation of the Coaching/Linker intervention. These meetings continued after the intervention was underway, although less frequently.

At the hospital-project team partnership level, the Linkers at hospitals spoke with their Coaches about once a month to discuss strategic plans, update Coaches on hospital activities, and seek guidance. The larger group of Coaches and Linkers convened meetings every four to six months to promote cross-facility learning.

The core Project Team and the project Advisory Council attended a Strategic Planning Retreat in January 2003 to plan and launch the project’s partnership activities. The retreat led to the development of working groups that continue to operationalize the strategic plan. The PI, Dr. Donaldson, maintains ongoing collaborative contact with co-investigators and working groups.

Table 1. Partner Organizations and Roles in the Project

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<tr>
<td><strong>Lead Organization</strong> (grant recipient)</td>
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<tr>
<td>Association of California Nurse Leaders (ACNL)</td>
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<tr>
<td>• Refine processes and procedure to assure compliance and efficient administration of the business aspects of the project; manage sub-contracts</td>
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<tr>
<td>• Recruit and retain hospitals for the project</td>
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<tr>
<td><strong>Key Collaborators</strong></td>
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<tr>
<td>Project Team in addition to ACNL:</td>
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<tr>
<td>University of California, San Francisco (UCSF)</td>
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<tr>
<td>Cedars-Sinai Research Institute</td>
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<tr>
<td>California State University Fullerton (CSUF)</td>
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<tr>
<td>• The PI, Nancy Donaldson from UCSF, and two co-investigators lead project activities</td>
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<tr>
<td>• The core Project Team works on strategic planning and evaluation for the project and are Coaches to Linkers in hospital sites to facilitate implementation</td>
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<tr>
<td>• Cedars-Sinai oversees data management for the data received from participating hospitals</td>
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<tr>
<td>• The consultant from CSUF, Dana Rutledge, is the only member of the Project Team who also is not part of the CalNOC’s Operations and Research teams; Dr. Rutledge developed the role of the Linker and has worked to keep Linkers engaged</td>
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(continued)

Cedars-Sinai Research Institute, and Ms. McFarland with ACNL) coordinate and manage the work of CalNOC with the policy direction and advice of the Governance and Advisory Council. The CalNOC Research Team, under the leadership of Co-Principal Investigators Drs. Donaldson and Brown, is accountable for the integrity of CalNOC methods, studies, and reports. The CalNOC Governance and Advisory Council engages CalNOC stakeholders as strategic partners in shaping CalNOC methods, measures, and strategies.
Table 1 (continued)

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<tr>
<th>Key Collaborators (continued)</th>
<th>Organization</th>
<th>Role in Project</th>
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<tr>
<td>CalNOC Advisory Council—All organizations above (except CSUF) and:</td>
<td>• Provide advice on methods, measures, and strategies</td>
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<tr>
<td>ANA National Database for Nursing Quality Indicators (NDNQI), VA NOD, MilNOD, Gordon and Betty Moore Foundation AHRQ</td>
<td>• ANA’s NDNQI may help to implement the Coach-Linker intervention nationwide</td>
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Target Organizations

91 medical-surgical patient care units in 32 participating CalNOC hospitals statewide • Implement falls risk assessment on admission; patients at-risk receive prevention interventions; provide feedback on effective improvement strategies and barriers faced

3. Project Evaluation and Outcomes/Results

The evaluation of the project consisted of tracking and analyzing the project’s effect on falls-related outcomes indicators, e.g., falls per 1000 patient days and injury falls per 1000 patient day. It compared falls-related outcomes in the 91 participating units (called TRIP or Translating Research into Practice units) in the 32 hospitals before and after the intervention, and with non-participating units (non-TRIP units) in the same hospitals. The project collected monthly data on these indicators for each participating medical-surgical unit. Pre-intervention data came from the period 2001 to the first quarter of 2003, and post-intervention data was from 2005. The analysis examined data from all the units with pre- and post-data available – 89 TRIP and 260 non-TRIP units.

The analysis found that the mean changes in falls and falls with injury were not significantly different between the pre- and post-data period for TRIP/participating units. In addition, the mean changes in falls and falls with injury were not significantly different for TRIP versus non-TRIP units. Despite the lack of statistically significant change, the project did find that falls per 1000 patient days for TRIP units were trending in the right direction – decreasing slightly between pre and post periods. The lack of a statistically significant drop in falls in the TRIP hospitals was attributed to convergent impact of JCAHO’s 2004 focus on falls rates and the resulting range of organizational and clinical activities to reduce falls implemented in participating hospitals. In addition, the fact that the outcome variable (falls) is relatively rare and annual rates are highly variable may have affected the power of the interventions to achieve results. The statistically significant increase in injury falls in the TRIP units from the pre to post time period may be due to improved reporting. The coaching team was exploring further the reasons for these findings at the time this summary was prepared.

Other outcomes include informal learning about the process of implementing evidence-based interventions in hospitals. For example, the three-year time horizon for this project may be too long in view of hospitals’ single-year budgeting cycles, suggesting that the improvement process may need to adopt the rapid cycle model. In addition, the sustainability of the interventions can be compromised by the turnover of Linkers – nurse champions in each hospital – and Chief Nursing Officers, who are the principal administrative sponsors of the programs.

4. Major Products

• Donaldson, Rutledge, and Ashley "Outcomes of Adoption: Measuring Evidence Uptake by Individuals and Organizations." *Worldviews on Evidence-Based Practice Journal* (Suppl; Sept. 2004).

• Expanded CalNOC website to include information for sites with bulletin board, library, and project-specific drill-down reports available to participating hospitals on an ongoing basis.

• Self-Assessment Tools (Organizational and Unit Level); Fact Sheet; Miles Stone is Falls Improvement; Falls Rater-to-Standard Training Tutorial.

5. **Potential for Sustainability/Expansion after PFQ Grant Ends**

   The Project Team has executed an agreement with the American Nurses Association to use the ANA NDNQI website for transforming “live” coaching at sites into a self-directed online process; this could help to sustain this activity. CalNOC received a follow-up grant from the Gordon and Betty Moore Foundation, which supported CalNOC in continuing some of this work as part of the foundation’s efforts to evaluate the impact of its multifaceted $110 million nursing initiative in the San Francisco Bay Area, designed to improve nursing-related quality and safety in acute care hospitals. This partnership with the Gordon and Betty Moore Foundation also has supported increased collaboration between CalNOC, ANA, and NDNQI.
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PFQ GRANT SUMMARY
CHP HEART FAILURE GAP (GUIDELINES APPLIED IN PRACTICE)

Lead Organization: Catholic Healthcare Partners (CHP)
Partner Team: CHP HF GAP Partnership, Ohio State University, Case Western University, National Heart Failure Training Program, American Heart Association, and others
Title: CHP’s Closing the “GAP” for Heart Failure (GAP=Guidelines Applied in Practice)
Topic Area: Quality improvement for patients with chronic congestive heart failure
Principal Investigator: Donald Casey, Jr., MD (was Chief Medical Officer at CHP but remained PI after his move to Atlantic Health System, NJ in 2005)
AHRQ Project Officer: Margaret Coopey
Total Cumulative Award: $1,278,719
Funding Period: 9/02-9/06
Project Status: Request for no-cost extension through September, 29, 2007 under review

1. Project Description

Goals. The purpose of this project was to improve health outcomes for patients with heart failure (HF) by promoting the consistent use of evidence-based guidelines in the treatment of such patients, i.e., narrowing the gap between clinical evidence and clinical practice. It sought to motivate quality improvements for such patients throughout Catholic Healthcare Partners (CHP), a large health system comprised of 31 hospitals and other health care facilities located in 9 regional health systems in 5 states. The project tried to develop and demonstrate CHP’s ability to improve chronic illness care for patients with HF through the effective use of standardized quality measurement systems for the treatment of HF patients. These improvements were designed so that all hospitals in the CHP system could sustain effective, broad-based national and local partnerships to support and sustain this work on an ongoing basis after the end of the grant period.

Activities and Progress. The project initially planned to adapt evidence-based heart failure interventions and develop standardized HF “tools” for all 31 CHP hospitals. However, after an initial planning period, project leadership decided instead to encourage CHP hospitals to adopt nationally endorsed quality interventions through explicit alignment with the health care system organizational structure, culture, and capacity. The project selected six community hospitals in six of the nine regional CHP systems to participate in the project and convinced hospital CEOs to support or adopt existing HF quality improvement interventions and tools that were evidence-based and met their system’s needs.

In 2003, 21CHP hospitals chose to report nationally developed quality measurement for HF to CMS and JCAHO as a part of the Hospital Quality Alliance (HQA): (1) ACE inhibitor prescribed at discharge, (2) left ventricular function (LVEF) assessment, (3) smoking cessation counseling, and (4) appropriate discharge instructions. The CHP hospitals regularly collected data for these measures through the MIDAS system, a national proprietary data warehouse with patient outcomes and treatment information that permits comparisons among hospitals using benchmarks set by top performing hospitals. CHP initially set a goal of achieving a minimum score for each measure at or above 75 percent of all HF patients, or in the top 25th percentile in the MIDAS system, whichever was greater. During this time, CHP also developed an organizational goal of reducing the system’s 30-day all-cause readmission rates for patients with an index admission for HF. To create strong incentives for CHP regional health systems to improve HF care quality, CHP evaluated performance for all CHP home office staff, regional CEOs, and other senior management, contingent on successful achievement of these performance targets for
chronic HF. Moreover, CHP added an HF readmission metric to the evaluation of regional health systems by the CHP national and regional boards.

The project encouraged all CHP regional systems to select evidence-based HF quality improvement tools and plans that best fit their needs. The project team also decided to develop one common intervention for six specially selected hospitals. They created a staff position called the “Heart Failure Advocate” (HFA) to facilitate the implementation of quality improvement tools and plans. The project recruited and trained HFAs, all of whom were nurses, from each of these six hospitals in the second project year. The HFA job was designed to manage and coordinate care more effectively for HF patients at high risk for readmission or death, and also to implement broader quality improvement initiatives for HF within each of the six hospitals. The HFAs also conducted intensive follow-up for the high-risk patients after discharge. The HFAs generally spent 50 percent of their time managing individual HF patients and 50 percent improving the system of HF care. The project funded the HFA position salaries in the first year with the understanding that the hospitals would transition to providing 50 percent salary support and eventually would fully cover the cost of the staff positions. At the end of the project, one of the participating hospitals decided not to continue to fund its HFA position, but additional HFA positions were created for implementation in four other CHP hospitals.

The HFAs participated in several types of training to cover a variety of critical skills identified for the project, such as communication, management, and technical and clinical expertise. They also attended a two-day training session provided by the National Heart Failure Training Program (N-HeFT) to further develop and refine their skills. They were encouraged to attend individual sessions throughout the project period to refine improvement strategies for achieving highest performance on the HF quality measures, as well as to enhance their abilities to better provide care coordination, medication management, and patient/provider education. To build organizational support for quality improvement, the HFAs also recruited physician champions to support the project. These physicians accompanied the HFAs to a special training session provided by N-HeFT and The Ohio State University that focused on disease management strategies, effective communication between nurses and physicians, developing strategies for setting up an effective HF program, and managing change.

To diffuse the adoption of evidence-based guidelines for the treatment of patients with HF in the community, the project provided HF education to physicians, nurses, and other clinicians in the CHP system, as well as other personnel from organizations external to CHP. To accomplish this, the project created CME-accredited HF education programs for community physicians and hospital staff. These were presented through several teleconferences at participating hospitals to explain the project and its progress to the larger HF community and other large “observer” health systems.

2. Partnership Structure/Function

The CHP project was run by a core project team led by Dr. Donald Casey and other CHP staff, as well as some members of non-CHP partner organizations (see table below). The core project team included seven co-investigators and their respective teams. National HF experts Dr. Abraham (Ohio State University) and Dr. Pina (Case Western University and N-HeFT) were involved directly in the project, providing training to HFAs and developing and personally presenting education sessions for community physicians at several HFA hospitals. Other co-investigators provided strategic advice and promoted physician participation in project activities. Although the project included monthly conference calls between co-investigators, HFAs, and supervisors, some co-investigators communicated more frequently.

The project established four sets of partnerships: (1) between CHP and the individuals or organizations that comprised the core project/research team; (2) between the project team and the CHP HF GAP Partnership, comprised of local and national expert cardiologists, advanced practice cardiac care nurses, regional CEOs, and advisors from outside of CHP, who provided multidisciplinary expertise, helped convene/recruit local participants, disseminated the model, and provided feedback on project
results; (3) among the project team, HFAs, and the hospitals/regional health systems they represented; (4) between the project team and the “observer” organizations that the project hoped would adopt or endorse the model, (e.g., other large Catholic health systems such as Catholic Health Initiatives, Catholic Healthcare East, or Trinity Health), and the Greater Cincinnati Health Council.

### Table 1. Major Partner Organizations and Roles in the Project

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<tr>
<th>Lead Organization (grant recipient)</th>
<th>Catholic Healthcare Partners</th>
<th>• Provided the quality improvement leadership and oversaw the project’s activities</th>
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<tbody>
<tr>
<td>Key Collaborators</td>
<td>Core Project/Research Team:</td>
<td>• William Abraham MD, from Ohio State University (co-PI), one of the HF GAP major clinical expert leaders, provided advice for program design/execution and design of program assessment</td>
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<td></td>
<td>Ohio State University</td>
<td>• Ileana Piña MD, from Case Western and N-HeFT (co-PI), another major clinical expert leader, provided training and technical support to Advocates and advice for program design and assessment</td>
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<tr>
<td></td>
<td>Case Western Reserve University</td>
<td>• John Schaeffer MD, from North Ohio Heart Center, a clinical expert, provided advice for program design/execution and program assessment</td>
</tr>
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<td></td>
<td>N-HeFT</td>
<td>• Liu Guo, PhD, from Xavier University conducted the program’s evaluation</td>
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<tr>
<td></td>
<td>Xavier University</td>
<td>• Rick Snow, DO from Applied Health Services</td>
</tr>
<tr>
<td></td>
<td>North Ohio Heart Center</td>
<td>• Provided multidisciplinary expertise</td>
</tr>
<tr>
<td></td>
<td>Applied Health Services</td>
<td>• Helped convene/recruit local participants</td>
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<tr>
<td></td>
<td>CHP HP GAP Partnership:</td>
<td>• Evaluated and provided feedback on project results</td>
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<td></td>
<td>Cardiologists from CHP regions, CHP Regional HF Experts, American Heart Association</td>
<td>• Participated in communication/dissemination (particularly AHA) by including the Advocates in its new ‘Get With The Guidelines’ program</td>
</tr>
<tr>
<td></td>
<td>HF GAP Observers: Catholic Healthcare East, St Joseph Health System, Catholic Health Initiatives, Greater Cincinnati Health Council</td>
<td>• Heart Failure Advocates managed high-risk patients and implemented quality improvement interventions; hospital executives monitored and managed QI improvements</td>
</tr>
<tr>
<td>Target Organizations</td>
<td>Six CHP regional health systems, with one hospital from each system hosting an advocate</td>
<td>• Heart Failure Advocates managed high-risk patients and implemented quality improvement interventions; hospital executives monitored and managed QI improvements</td>
</tr>
</tbody>
</table>

### 3. Project Evaluation and Outcomes/Results

**Project Evaluation.** The evaluation of the project will assess (1) the CHP HF GAP Partnership, based on eight dimensions, such as partnership synergy, partnership involvement, and others; (2) the degree of implementation of HF care interventions; (3) improvement in the process of care delivery; and (4) the impact of improved practices on clinical and cost outcomes. The performance measures include:

1. Four national HF inpatient performance measures collected for JCAHO and CMS (ACE inhibitor prescribed at discharge, LVEF assessment, smoking cessation counseling, and appropriate discharge instructions)
2. 30-day all-cause (not just for HF) readmission rates for patients with an index admission for DRG 127
3. Appropriate identification and referral of chronic HF patients to palliative or hospice care at or near the end of life

4. Effectiveness of CHP HF Advocates in influencing the above measures

5. Effectiveness of the CHP HF GAP Partnerships (system-wide and regional)

6. Financial impacts of the initiative, with special attention to the effects of pay-for-performance and other monetary and non-monetary incentives on all of the above

Data for these measures will be derived primarily from existing data already collected by regional CHP organizations, e.g., through the MIDAS system. The methodology uses a quasi-experimental study, comparing patients with versus without interventions, and comparing the same cohort of patients between the pre- and post-intervention periods.

To determine the effect of interventions, such as training, on HFAs, a survey or focus group will be conducted to determine if the partnership met their needs, how it could better address their needs, and which non-partnership interventions were implemented that affected HFA performance. The project intends to use the tool created by the Partnership Subcommittee in AHRQCoPs to measure the success of its Partnership.

**Outcomes/Results.** Although final data analysis was not complete at the time this summary was written in October 2006, initial analysis of the evaluation data showed that patients under the care of the HFAs have experienced fewer readmissions and a longer time between readmissions than those patients not enrolled in the program (i.e., those with “usual care”). Further analysis indicates that patients experienced a 66 percent reduction of hospitalizations after they were enrolled in the HFA program. Their 30-day readmissions were reduced by 41 percent in the post-enrollment period. Their days elapsing without readmissions were doubled in the post-enrollment period (469 days), compared to the pre-enrollment period (211 days). Early results also show that 30-day all-cause readmission rate for HF patients cared for by the HFAs consistently ranged from 1 percent to 10 percent on a quarterly basis, compared to the CHP hospitals’ average readmission rates. HF readmission rates for the 21 CHP hospitals decreased to 18.3 percent in the third quarter of 2005 from 22.0 percent in the same quarter of 2003. The CHP system as a whole also has been highly successful in improving its performance on the four national HF quality measures, all of which have improved since 2002. For example, the LVEF assessment measure rose from 77 percent in the third quarter of 2002 to 95 percent in the second quarter of 2006. The most recently available composite score of 95 percent for the four HF quality measures put CHP as a single entity in the top decile of performance within the CMS-Premier Hospital Quality Incentive Demonstration Program.

One lesson learned from the project is that organizational goals and incentives based on standardized quality measures (e.g., the HF measures developed by the American College of Cardiology and the American Heart Association) are more important motivators of quality improvement than standardized tools. The project’s experience also highlights the difficulty of motivating hospitals to adopt a program that is not profitable, since reducing hospital readmissions may lower total revenue. We were told by some interviewees that while the individual HFAs have been effective change agents, a larger number of HFAs would make a bigger difference in reducing global hospital readmission rates for patients with HF.

4. **Major Products**
   - HFA training program developed by N-HeFT
   - Special video-DVD recording from April, 2005 highlighting the key elements of the CHP HF GAP initiative, presented to CHP Governance Academy, Tucson, AZ.
   - Publications (see last page)
• Presentations at meetings of the Heart Failure Society of America, American Heart Association, and American College of Cardiology.

5. Potential for Sustainability/Expansion after PFQ Grant Ends

Five of the six participating CHP hospitals have made a commitment to continue funding the Advocate positions on their own. One of the hospitals found the HF Advocate position so useful that they are interested in creating an Advocate position for diabetes as well. Moreover, two new HF Advocates began in May 2006 in Cincinnati, Ohio as part of a pilot to see if the Advocates role can be adopted in other CHP hospitals. A hospital in New Jersey and one in Pennsylvania have also expressed interest in setting up an HF advocate position.

In 2005-06, the CHP HF GAP Partnership began efforts to create a broad coalition of stakeholders committed to improving HF care in Ohio. The Ohio Heart Failure Coalition (OHFC) was formed in September 2005, made up of organizations such as the national and regional offices of the American Heart Association, the Ohio Department of Health, the Ohio Hospital Association, several large health systems (CHP, University Hospitals of Cleveland, Ohio State, and Christ Hospital in Cincinnati), Ohio KePRO (the QIO in the region), and third party payers, notably Anthem Blue Cross of Ohio. The OHFC will attempt to gain the support and participation of more organizations for HF quality improvement activities based on the CHP HF GAP initiative. The mission of the OHFC is “to achieve transformational change across the continuum of heart failure care through an innovative collaborative dedicated to sharing best practices and resources.”

The CHP HF GAP also is trying to disseminate its approach by collaborating with the American Heart Association’s “Get With the Guidelines” project for HF, a quality improvement program available for purchase by hospitals that supplies a data collection tool and materials, including a full patient education program, methods for communicating with physicians, and patient education materials. CHP’s HFAs are presenting at regional and national AHA workshops. It was during one such workshop that one of the organizations now involved with the OHFC heard about the HF GAP program, prompting its participation in the OHFC. One grant partner indicated that some people who attended the AHA workshop were impressed by the HFA’s message and have taken their “lessons learned” back to their own hospitals.

6. Publication References


Lead Organization: Child Health Corporation of America (CHCA), Child Health Accountability Initiative (CHAI)

Partner Team: Lucile Packard Children’s Hospital at Stanford; 14 CHAI member hospitals, and later expanded to all 42 CHCA hospitals; Vermont Oxford Neonatal Network; IHI; and others

Title: Implementing Pediatric Patient Safety Practices

Topic Area: Quality improvement in pediatric inpatient care

Principal Investigators: Paul Sharek, MD, MPH, Medical Director, Child Health Accountability Initiative (CHAI) and Medical Director Quality Management, Lucile Packard Children’s Hospital at Stanford University

AHRQ Project Officer: Denise Burgess (formerly Marge Keyes)

Total Cumulative Award: $1,144,950

Funding Period: 9/02–9/06

Project Status: Completed 9/29/06

1. Project Description

Goals. The project sought to improve the healthcare of America’s children by integrating evidence-based practices on pain management, medication safety, and patient safety into selected CHCA member hospitals. The project planned to work with the 14 CHCA member hospitals participating in CHCA’s quality improvement group, the Children’s Health Accountability Initiative, but later expanded the project to work with all 42 CHCA member hospitals. Finally, the project planned to develop collaborative relationships with national pediatric organizations to disseminate its work more widely.

Activities and Progress. The Child Health Accountability Initiative (CHAI) was the clinical performance improvement arm of CHCA until 2004 when it expanded from 14 founding members to include all 42 member hospitals and internal CHCA staff. This collaborative, formed in 1997 continues to work to improve the quality of hospital care provided to children. The grant funds provided infrastructure support to enhance and accelerate CHAI’s efforts.

Year 1. CHAI devoted the first year to planning activities and infrastructure building. They developed a process for the collaborative to select quality improvement projects and a method of reviewing project plans under the three priority areas—patient safety, pain management, and medication safety. In addition to its regular national bi-annual meetings, CHAI organized an annual meeting to review and re-prioritize pending and potential projects. The grant funds also allowed CHAI to hire research and administrative staff to support the project, and funded the travel of 1-2 members of each CHAI hospital.

In the area of patient safety, CHAI established five “focus groups” to create and test toolkits for implementing patient safety best practices in hospitals. The groups focused on five best practices selected from AHRQ’s Making Health Care Safer: A Critical Analysis of Patient Safety Practices publication: (1) central venous catheter-related bloodstream infections, (2) surgical site infections, (3) medication errors and adverse drug event, (4) use of corollary orders to reduce potential adverse drug events, and (5) adverse events due to transportation of critically ill patients between health care facilities. The groups recruited CHAI hospital sites to help create implementation toolkits, implement the best practice interventions, and conduct data collection to examine the effectiveness of interventions. Toolkits
included audit sheets, best practice lists, supporting literature, implementation tips, information on barriers and ways to overcome them, and presentations on best practice site implementation.

In the area of pain management, CHAI established a collaborative to implement best practices for post-operative pain management in the neonatal ICU (NICU) population. Eleven of the CHAI hospital sites chose to participate and collect baseline data, which were analyzed to determine pain assessment compliance, select areas for improvement, and identify potential best practices. Once best practices were identified, the participating hospitals would implement them and collect post-intervention data to examine effectiveness.

In the area of medication error reduction, CHAI evaluated a previously developed pediatric-focused “trigger tool” for identifying inpatient adverse drug events. Before the PFQ project, CHAI had tested the tool in 12 CHAI hospitals for sensitivity and positive prediction value, redesigned the tool for a pediatric population, and re-tested the tool. The results showed that the trigger tool identifies very different adverse drug event rates for different patient populations (newborn vs. adolescent) and different units in the hospital (PICU vs. Hematology-Oncology units). Given this finding, under the PFQ project, CHAI embarked on refining the trigger tool for subgroups and hospital units and worked to develop site-specific automation of the trigger tool in hospitals’ CPOE systems.

**Year 2.** In the area of patient safety, the group working on central venous catheter-related bloodstream infections completed its time series data collection. Three of the seven participating hospital sites had substantially improved central line associated infection rates, and none of the remaining sites had worsening infection rates. CHAI statistician began an in-depth analysis of the data for further conclusions. The focus group working on use of corollary orders to reduce potential adverse drug events, which had four participating CHAI hospital sites, and the group working on adverse events due to transportation of critically ill patients between health care facilities, which had seven participating CHAI hospital sites, collected baseline data from participating hospital sites and implemented best practices.

Also in the area of patient safety, the project began a collaborative to improve communication during transfers from the emergency department to inpatient med-surg units through the use of a standardized checklist at the time of transfer.

In the area of post-operative pain management for the NICU population, each of the eleven participating hospital sites selected best practices, incorporated the interventions, and began collecting post-intervention data.

In the area of medication errors, further work on the trigger tool involved a joint venture between CHAI, Vermont Oxford Neonatal Network (VON), and the AHRQ funded “Center for Neonatal Patient Safety”. This group created, pilot tested, refined, and analyzed a NICU based trigger tool to identify adverse events in this high-risk population. VON maintains the largest database of NICU patient information in the world, including 75% of all newborns with birthweight of 1500 grams and under in the U.S. and the partnership connected CHAI to VON’s expertise and database.

**Year 3.** From the end of 2004 to early 2005, CHAI significantly expanded the project from the 14 CHAI hospitals to include all 42 CHCA hospitals. This massive expansion was undertaken in part because it became apparent to non-participating sites that the CHAI interventions were so effective that they should not be limited to the 14 hospitals. CHAI learned from its experience with the five focus groups that their QI approach needed more rigor and more accountability. This coincided with member hospital CEOs coming to realize that QI was not just something for the quality department; rather that “quality was the business they were in.”
For these reasons, CHAI decided to shift its strategy to incorporate the Institute for Healthcare Improvement (IHI) “breakthrough” improvement model, which includes the rapid cycle “plan-do-study-act” approach to QI, as it expanded to include all 42 CHCA hospitals. CHAI’s quality improvement efforts with all CHCA hospitals centered on two rapid cycle breakthrough projects: (1) reducing catheter-associated bloodstream infections in children by 50 percent, in which 29 hospitals participated and (2) reducing adverse drug events related to narcotics in children by 50 percent, in which 20 sites participated. Of the 42 CHCA hospitals, 33 participated in at least one of these two projects, with 18 sites participating in both. Participating hospitals attended a series of learning sessions, reported data monthly and received intensive coaching on change implementation in conference calls between sessions.

Efforts to improve communication during transfer from ED to inpatient units were completed in February 2005. The 11 hospitals that implemented best practices related to NICU post-operative pain management also finished their work and submitted site-specific data for analysis. Based on the findings and lessons learned from this project, CHCA plans to embark on a NICU based project for all CHCA member hospitals.

In the third year, CHAI completed its pilot test of the NICU trigger tool, using 42 charts from 4 pilot site volunteer hospitals. The project revised the trigger tool based on the analysis of the pilot data and expanded it to 15 participating hospital sites including 6 CHCA hospitals and 9 VON hospitals (several are in both groups). Each hospital contributed 50 charts for the full NICU trigger tool trial to identify adverse events. The review found 505 unique adverse events; of which 58 percent were determined to be preventable. The most frequent adverse events were nosocomial infections, catheter infiltrations, intracranial bleeds, and accidental extubations. These findings helped NICUs better target their patient safety efforts. The project intends to refine the trigger tool based on results and analysis of the full trigger trial.

**Year 4.** The group working to reduce bloodstream infections completed intermediate data collection and implemented multiple best practices at the 29 participating hospital sites. The project entered into a “sustaining phase,” which emphasized the spread of project lessons to new units at participating sites and to CHCA members unable to previously participate. For example, CHCA teamed with National Association of Children’s Hospitals and Related Institutions (NACHRI) and National Initiative for Children’s Healthcare Quality (NICHQ) to sponsor a series of web casts aligned with IHI’s 100,000 Lives Campaign that will be open to any hospital, not just CHCA hospitals during which the ADE and CABSI project and data were discussed.

In the area of medication errors, CHAI refined and improved the NICU trigger tool based on results from the full trial, guidance and feedback from content experts and IHI recommendations. Based on the success of the NICU trigger tool, CHCA has begun to develop and test a pediatric ICU trigger tool and recruited 22 hospitals to participate. Efforts to reduce adverse drug events (ADE) related to narcotics, involving 20 CHCA hospitals, included implementation of best practices, coaching of hospitals by project staff, and feedback reporting to hospitals, and data analysis. Future efforts will focus on sustaining these improvements.

2. **Partnership Structure/Function**

The Child Health Corporation of America, a collection of 42 free-standing children’s hospitals in the U.S. and Canada, was initially formed in 1997 as a purchasing collaborative. In 2001, a subset of the member hospitals began working together in the area of quality improvement and established the Child Health Accountability Initiative (CHAI) under the umbrella of CHCA. CHCA partnered with Dr Paul Sharek the medical director of CHAI and the medical director of quality improvement at Lucile Packard Children’s Hospital at Stanford University (a CHAI hospital) to serve as the PFQ project’s principal investigator.
The project’s four levels of partnership included: one between CHCA’s staff and the PI, Dr. Sharek; a second among the 14 hospitals in CHAI; a third between CHCA and all its hospital members; and a fourth between CHCA and other pediatric care associations for dissemination purposes. The grant funds provided infrastructure support—hiring a project manager, data analyst, statistician, and 2 quality improvement experts—that allowed these existing partnerships to work better collaboratively and provide more rigor to the quality improvement work already begun. The grant also helped pay for each of the 14 hospitals to send representatives to CHCA’s semi-annual national meetings and the annual CHAI meeting, which were components of the larger semi-annual CHCA meetings, to discuss the project selection and progress. Though Dr. Sharek guided the process of project selection, the selection of projects occurred democratically with input from all 14 CHAI members based primarily on the availability of evidence-based interventions and the individual and collective priorities of the 14 member hospitals.

In 2004, the performance improvement department of CHCA (“CHAI”) expanded to include the entire 42 members in CHCA. The first 2 major pediatric patient safety projects overseen by the CHCA performance improvement department after this expansion were “Decreasing catheter associated blood stream infections” and “Decreasing adverse drug events related to narcotics in pediatric patients”. These two large collaborative projects utilized the Institute for Healthcare Improvement (IHI) model for collaborative quality improvement, which included the following implementation strategies: pediatric content expert-development of a “bundle” of evidence based best practices to be implemented, monthly group conference calls with all the participating sites, monthly progress reports to the sites’ senior leaders that included site-specific feedback and prescriptive recommendations. It also established an active project-focused list-serve, and made it possible to submit data to CHCA staff through an extranet website.

Table 1. Major Partner Organizations and Roles in the Project

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<thead>
<tr>
<th>Organization</th>
<th>Role in Project</th>
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<tbody>
<tr>
<td><strong>Lead Organization</strong> (grant recipient)</td>
<td>Child Health Corporation of American (CHCA), Child Health Accountability Initiative (CHAI), the collaborative clinical performance improvement arm of CHCA (from 1997-2004; performance improvement department expanded to include all 42 members in 2004). • Overall leadership and selection/implementation of projects.</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong></td>
<td>Lucile Packard Children’s Hospital, Stanford University • The project PI, Dr. Paul Sharek oversaw project implementation, decision-making regarding publication focus, and development of relationships with other collaborators. He also prepared all grant related reports, attended AHRQ sponsored grant conferences, and presented the project and outcomes at numerous venues. • CHAI hospitals participated in various focus group QI projects • VON helped create a new neonatal trigger tool for the project to identify adverse events (AEs) in the Neonatal Intensive Care Unit (NICU). Additionally, the VON partnership has extended to include a focus on NICU based quality improvement in years 2006 onward for CHCA • Consultants provided expert opinion for the project’s development and implementation, and provide space on the IHI website to disseminate toolkits and findings • NACHRI and NICHQ helped with broader dissemination of project results, via multiple national conference presentations by CHCA</td>
</tr>
<tr>
<td>14 CHAI hospitals</td>
<td>Vermont Oxford Neonatal Network (VON) and the Center for Neonatal Patient Safety (an AHRQ funded center)</td>
</tr>
<tr>
<td>Consultants: Institute for Healthcare Improvement (IHI) and David Classen, MD</td>
<td>National Association of Children’s Hospitals and Related Institutions (NACHRI) and National Initiative for Children’s Healthcare Quality (NICHQ)</td>
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<tr>
<th>Organization</th>
<th>Role in Project</th>
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<tr>
<td>Initially 14 CHAI participating hospitals and organizations; later expanded to all 42 CHCA hospitals</td>
<td>• Participated in various QI projects by providing data and implementing best practices</td>
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3. Project Evaluation and Outcomes/Results

Pain management

- Results from the 9 sites participating in the pain management project (of the original 11) included: (1) Numeric pain assessment performed by MDs or NNPs may be more effective than those assessments solely used/documented by RNs; (2) a numeric pain scale should be used on day 1 and day 2 post-op; (3) a central method for documentation is most effective; and (4) hospitals should adopt a standardized tool for pain assessment and use it consistently.

Medication safety

- The CHCA Adverse Drug Event pediatric trigger tool identified 22 times more adverse drug events than traditional reporting mechanisms (i.e. incident reports). The project plans to place the final trigger tool on the IHI website for general use.
- Data analysis of the 18 CHCA hospitals that participated in the 18 month collaborative project to reduce adverse drug events (ADE) related to narcotics showed a collaborative-wide decrease from 39.1 to 17.1 ADEs per 1000 narcotic doses, a 49 percent reduction for the entire collaborative. Savings from this collaborative, in which 662 ADEs were prevented, was between $1.7 and $3.1 million depending on the whether these ADEs were “not preventable” ($1.7 million) or “preventable” ($3.1 million) using the cost data provided by Bates et al in the medical literature (JAMA 1997).

Patient safety

- Twelve CHAI sites that implemented measures to improve communication during transfers the ER and inpatient units improved pediatric patient safety as manifested by decreased duplicate or missed medications, duplicate or missed lab tests, and incorrect or absent infection control information to minimize iatrogenic inpatient infections.
- Final data analysis showed improvements in infection rates for 18 of 29 participant sites (57% reduction in these 18 sites), and a collaborative wide reduction for all 29 participating hospitals from 6.9 to 4.8 per 1000 line days, a 31 percent reduction, and those in this collaborative achieved over 88% compliance to the IHI and CHCA-built “best practice” maintenance bundle. Eleven hospital sites decreased catheter-associated bloodstream infection (CABSI) rates more than 50 percent. Overall, 112 CABSIs were avoided, resulting in a net savings of $960,549 based on the actual costs established by the CHCA database.

4. Major Products

- Neonatal ICU trigger tool, and toolkit, available on the CHCA website as well as soon to be available on the Vermont Oxford Network and Institute for Healthcare Improvement (IHI) websites


• Two new toolkits available on CHCA website: (1) Catheter Associated Blood Steam Infections in Pediatrics and (2) Adverse Drug Events in Narcotics.

5. Potential for Sustainability/Expansion after PFQ Grant Ends

The evolution of the project’s target organizations, from the 14 CHCA member hospitals participating in CHAI to all 42 CHCA members hospitals represents a significant expansion in the number of children’s hospitals actively participating in quality improvement activities. This was made possible in part by the AHRQ grant funds that supported the creation of additional infrastructure, data analysis and research support at CHCA, lending more rigor to CHAI work, which in turn led to more CHCA site participation, more publishable work, and increased likelihood of sustainability of activities in sites and dissemination outside of CHCA.

Quality improvement work will be continued at CHCA with other support once AHRQ funding ends. CHCA will provide financial support for future quality improvement collaboratives, including those just beginning in September 2006 (Decreasing Surgical Site Infection Rates, and Decreasing wait times in the Emergency Department). CHCA regards this work as contributing to its overall mission and will dedicate funds from the revenues generated through its group purchasing activities. Additionally, at times, there will be a fee for each site to participate in future collaboratives. This fee, of $23,000 for one or both collaboratives, has not decreased the participation of members in the collaboratives; over 30 members are participating.

CHCA has built into its organization a mechanism for what they call “spread” that relies on its website to provide learning opportunities, resources, tools, etc., from all CHCA performance improvement projects. In addition, CHCA and VON are discussing a CHCA NICU performance improvement project that will leverage the best practice recommendations set forth by the recently completed NICU post-operative pain management project.
PFQ Grant Summary
Training for Improved Provider Response to Bioterrorism

Lead Organization: Connecticut Department of Health (DPH)
Partner Team: Connecticut DPH; Yale New Haven Health System (YNHHS), Center for Emergency Preparedness and Disaster Response
Title: Training for Improved Provider Response to Bioterrorism
Topic Area: Bioterrorism Continuing Medical Education for physicians
Principal Investigators: Louise Dembry, MD (Yale-New Haven Health System) and Michael Hoffman, Ph.D (Connecticut DPH-retired) and Lloyd Mueller, Ph.D (Connecticut DPH)
AHRQ Project Officer: Sally Phillips
Total Cumulative Award: $299,999
Funding Period: 10/02–9/05
Project Status: Completed September 2005

1. Project Description

Goals. The aim of this project was to identify and/or develop a web-based bioterrorism training program for front-line physicians, and evaluate its effectiveness. The Connecticut Department of Public Health (DPH), the primary grant institution, receives funding from CDC and HRSA to provide bioterrorism education and training for the state’s public health and health care delivery systems. This work, however, does not address the educational content and methods of delivery most appropriate for and effective with different health care professionals, a gap this project was designed to fill. The project proposed a two-phase approach—a planning phase that would select or develop bioterrorism teaching tools/programs, and a second phase to test and evaluate their effectiveness.

Activities and Progress. During the first planning year, project staff conducted literature reviews on effective educational methods and tools for physicians, as well as emergency preparedness and bioterrorism training programs. Information from these reviews led project staff to create a 30-minute Power Point presentation on basic principles of emergency management called “Emergency Management 101.” Staff also created a tool for comparing courses in emergency/disaster preparedness based on three sets of criteria developed by the (1) American College of Emergency Physicians, (2) Centers for Disease Control and Prevention, and (3) OSHA/U.S. Army Biological Defense Command/National Fire Protection Administration. The tool was used to examine training programs that had competency standards developed by researchers at Columbia University and St. Louis University.

To inform the selection of an emergency/disaster preparedness training program, the project created and conducted a pilot survey of clinicians on information needs and preferred learning modalities for continuing medical education (CME). Project staff distributed the survey to 2,075 physicians at three Yale New Haven Health System hospitals (Yale-New Haven Hospital, Bridgeport Hospital, and Greenwich Hospital). A total of 811 surveys were returned. Analysis of the survey results showed that physicians were more interested in their roles in emergency or bioterrorism events, and how they should respond, rather than the clinical aspects of disease detection, which was the focus of training modules developed by Columbia University and St. Louis University. This mismatch led the project team to develop a new training course to better meet physicians’ needs.

During the second year, project staff created the training program, “Bioterrorism Preparedness for Clinicians - EM 201,” a 50-minute web-based program on basic principles of emergency management that emphasized (1) bioterrorism-related syndrome identification, (2) immediate precautions to protect...
health care workers and prevent person-to-person transmission, and (3) the reportable disease process in Connecticut and chain of communication for suspicious syndromes/events. Web-based sources of additional information on specific diseases also were provided. The grantee obtained approval from the Bridgeport Hospital Department of Medical Education for one CME credit for the training program. The project pilot-tested the new training course with a small group of physicians at Yale-New Haven Hospital/Yale University School of Medicine.

During the third year (Phase II), physicians who responded to the original survey and said they would be willing to test the new training course were asked to participate. Actually getting physicians to take the course proved more difficult than expected, partly because physicians are very busy and free CME credits were not sufficient inducement. In addition, volunteers were not guaranteed that they could take the course right away, as some would be randomly assigned to a control group. Project staff secured enough participation by allowing those in the control group to take the course after the study period, and by offering a prize drawing. Study participants took a pre-test of competency related to bioterrorism, participated in the web-based training, and were tested on their knowledge immediately after taking the course, as well as four to six months later, to measure longer-term knowledge retention. Control group physicians were given the pre-test, and a test four to six months later.

Statistical analysis of the intervention and control group test results showed that physicians taking the bioterrorism preparedness course experienced a significant increase in knowledge as seen in the differences between pre-test and immediate post-test mean examination scores (60.6 to 77.2), while control group scores did not change (56.2 to 56.60). Unfortunately, longer term follow-up scores among the physicians taking the course showed a marked decrease to a mean of 64.4, close to their baseline measure of knowledge. This could be due to lack of opportunity to actually use the knowledge gained during the course.

Although the original proposal planned to adapt the course for other types of health professionals, such as nurses and physician assistants, and to test the course among health professionals in the northern part of the state, the need to develop a new training course and problems enrolling physicians in the first study produced delays and caused funds to run out before the project could expand to additional test groups/sites.

2. Partnership Structure/Function

Project staff from the two lead organizations, the Connecticut DPH and the Yale New Haven Health System, held meetings on at least a monthly basis during critical periods to coordinate tasks involved in planning, implementing, and evaluating project activities. Those attending the meetings included the Co-Principal Investigators (Louise Dembry, MD from YNHHS and Lloyd Mueller, Ph.D, CT DPH); the Director of Office of Emergency Preparedness at YNHHS (Christopher Cannon), the project’s clinical Education and Research Coordinator (David Burich), and the project’s consultant (Kari Hartwig, Ph.D., Yale University).

Additional experts were consulted to provide advice on clinical and public health epidemiology and surveillance, the development and evaluation of competency assessment tools and educational modules, and statistical analysis of survey results. Experts were drawn from Yale University School of Medicine, Department of Epidemiology and Public Health; Columbia University; and St. Louis University.
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<td><strong>Lead Organization</strong> (grant recipient)</td>
<td>Connecticut Department of Public Health (DPH)</td>
</tr>
<tr>
<td></td>
<td>- Grant recipient/fiduciary; assisted in coordinating project activities and outcomes for bioterrorism education and training activities funded through HRSA and CDC grants, and with public health community; DPH also provided technical assistance on study research design and analysis, and on coordination with other emergency preparedness education and training</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong></td>
<td>Yale New Haven Health System (YNHHS), Center for Emergency Preparedness and Disaster Response</td>
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<td>- Project Investigator is Associate Medical Director of this Center at YNHHS, which carried out the work of the project: evaluated existing competency assessment tools for physicians, surveyed physicians on learning needs and preferences, developed training tools and modules, and surveyed course participants and controls</td>
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<td></td>
<td>- Shared competency evaluation tools and educational modules, as well as interactive tools for training, communication, and improvement of surveillance and threat assessment. Modules and tools were intended to be used to deliver training through distance learning modalities, but later this mode was determined not to match physician needs</td>
</tr>
<tr>
<td><strong>Target Organizations</strong></td>
<td>Practicing physicians from various work settings</td>
</tr>
<tr>
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<td>- More than 2000 YNHHS physicians for needs assessment; 41 hospital-based clinicians in 3 Yale-New Haven hospitals, and physicians in community settings in the Southern Tier of Connecticut for course testing; also 51 control group physicians from the same settings/area</td>
</tr>
<tr>
<td></td>
<td>- Planned to expand study group to additional types of health professionals and to the northern tier of the state, but delays prevented this</td>
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</table>

3. Project Evaluation and Outcomes/Results

This project was designed to evaluate the effect of a training program on physician knowledge of bioterrorism preparedness and response. Like most training programs, it had an initial, significantly large impact on increasing participants’ knowledge, but long-term knowledge retention was poor. Based on analyses of responses that were answered correctly or incorrectly by most test-takers, and an evaluation of the course content by those in the intervention group, modifications were made to the course content. The project team planned to make further course content changes based on evaluations by those in the control group (i.e., those allowed to take the course after the study period). The course also was posted on the website of the YNHHS Office of Emergency Preparedness after changes were made to remove the Connecticut-specific information and substitute more generic information about public health agencies. The training now can be accessed by physicians in any state; “meta-tags” were added to permit common Internet search engines to locate the courses.

4. Major Products

- Survey instrument on learning modalities for CME and topics related to bioterrorism
- “Emergency Management 101”—30-minute Power Point presentation on basic principles of emergency management
- “Bioterrorism Preparedness - Emergency Management 201” training module, available on the Yale New Haven Center for Emergency Preparedness and Disaster Responses website
5. Potential for Sustainability/Expansion after PFQ Grant Ends

The course developed for this project is now available on the Yale New Haven Center for Emergency Preparedness and Disaster Responses website http://ynhhs.emergencyeducation.org/. Project staff report that since its official launch in January 2006, after the end of the project, about 300 physicians have taken the course, which is eligible for CME credit. There is a state mandate for documentation of CME (approximately 30 hours/year) but it does not yet include a requirement that any of the CME be related to emergency preparedness.
PFQ GRANT SUMMARY
A NATIONAL CENTER FOR VALUE PURCHASING

Lead Organization: HealthFront
Partner Team: Park Nicollet Institute; National Institute of Health Policy; Colorado Business Group on Health; Buyers Health Care Action Group
Title: A National Center for Value Purchasing Models
Topic Area: Performance Incentives
Principal Investigators: Michael Callahan, former Executive Director at HealthFront
AHRQ Project Officer: Michael Hagan
Total Cumulative Award: $1,281,576
Funding Period: 9/02 – 9/06
Project Status: Completed 9/29/06

1. Project Description

   Goals. The grant had two initial aims: (1) to develop a nationally recognized provider performance measurement, analysis, and award program, supported by purchasers; and (2) to develop the analytical capacity needed to support purchaser decisions on health care value purchasing. The grantee, HealthFront is a non-profit spin-off of the Minnesota-based Buyers Healthcare Action Group, with a board consisting of employer purchasers, health care consumers, and providers. When another organization that was supposed to work on the first aim withdrew from the project, the grantee focused solely on the second aim. Specifically, its goal was to evaluate methods for accelerating the adoption of “best practice” payment incentive systems by all major purchasers in selected communities by: (a) informing purchasers about the current use of incentives in pay-for-performance (P4P), public reporting, and tiered network strategies; (b) educating them about how to use incentive strategies; and (c) helping health plans align their respective incentives for P4P and public reporting.

   Activities and Progress. Early in the first year after the project decided to focus on demonstrating how value purchasing could be supported and improved, the research team, comprised of researchers and staff from HealthFront, the National Institute of Health Policy, and Park Nicollet Institute, chose the Minnesota market for its initial test. The project partnered with the National Institute of Health Policy, led by former Senator David Durenberger and based at the University of St. Thomas (MN), and the Buyers Health Care Action Group (BHCAG), a group of major employers in the Minneapolis-St. Paul region that gave the project access to local purchasers and health plans. In the first year, the project conducted interviews with about 65 health plans and provider organization representatives regarding their current use of incentives and measures for P4P and public reporting. Results from these interviews indicated that there were vast differences among plans in their P4P activities and in the measures they used. The project team reported this information to purchasers to prompt discussions between them and the health plans about creating greater consistency in P4P and public reporting.

   Due to other priorities, BHCAG did not follow up, but they have remained active with the Smart Buy Purchasing Alliance (a group of state and private health care purchasers). The core membership of the Alliance consists of a group of purchasers originally brought together by the grantee to discuss alignment of incentives. Both BHCAG and HealthFront representatives serve on the Smart Buy Alliance. The Alliance recently made its first Bridges to Excellence physician bonus awards. Also, because of the state’s involvement with the Alliance, the Minnesota Department of Human Services is pursuing incentive payment reforms for Medicaid hospital services based on advice from the project team.
In the second year, the project work expanded into the Colorado market. The project partnered with the Colorado Business Group on Health (CBGH), which served as the conduit to employer purchasers in that community, and again conducted an assessment on the current status of P4P and public reporting in the market through interviews with local health plans and providers. The grantee presented the results of the assessment to purchasers, health plans, and other stakeholders. Although interesting to stakeholders, the findings did not spark extensive dialogue between purchasers and health plans, nor did it lead to quantifiable action to align performance incentives. However, the CBGH credits the project with setting the groundwork for the community’s entrance into Bridges to Excellence, a non-profit organization that recognizes and rewards health care providers for delivering quality health care.

In the third year, after the community assessments in Minnesota and Colorado were completed, the grantee brought together an expert panel via the Internet to discuss the role of incentives in improving preventive and chronic illness care, and the clinical capacity to manage care for better outcomes (e.g., registries, IT). Providers and purchasers from the two communities also participated in the discussion. In October 2004, the project conducted a one-day in-person, retreat at the request of several of the panel members.

The panel, which included such experts in the area of quality effects of incentives as Robert Berenson, Lawrence Casalino, and Judith Hibbard, participated in the discussions, as well as small group exercises that identified the best ways for purchasers to provide incentives to providers. These results were presented to purchasers in Minnesota and Colorado.

One of the findings from the expert panel discussions was that communication was poor between medical practice leadership and rank and file physicians regarding P4P practices and public reporting. Since physician response to incentives determines the effectiveness of P4P, the grantee and partners, at the request of the purchasers, decided to obtain more information about what physicians know or think about P4P, public reporting, the use of incentives, and how they would respond to incentives. Thus, in the third year, the project developed a survey for medical group managers in Minnesota to assess their perceptions of P4P, public reporting, and quality incentives in general. Analysis of the survey results focused on responses from the managers of 78 unique medical groups representing 6,964 physicians in primary care practice in Minnesota.

In the fourth year, results from the survey were presented to purchasers and plans in the state, which generated substantial interest. One of the findings was that a large number of physicians were uncertain about P4P and public reporting, either because they had a wait-and-see attitude or because they did not know much about it. This suggested the need to educate physicians. The research team wishes to contact the physicians in Minnesota again to see if there have been any changes in plan activities (e.g., education activities for physicians) as a result of the findings.

At the time this summary was prepared, the research team was fielding the physician survey in Colorado. Because practices in Colorado are smaller than those in Minnesota, the survey was revised to focus on the individual physician level rather than the group level. Once the survey and the data analysis are complete, the project will present findings to the Colorado Medical Society at its annual meeting. The survey was supported by the local leaders of Colorado Medical Society, the Colorado Academy of Family Medicine, the American Academy of Pediatrics, and the American College of Physicians.

2. Partnership Structure/Function

Project staff at HealthFront formed a core research team with two other groups: (1) health services researchers from Park Nicollet Institute, which is associated with a large multi-specialty medical group; and (2) the National Institute for Health Policy (NIHP), which is affiliated with the University of Minnesota and the University of St. Thomas. (The former Executive Director of NIHP is now at the University of St. Thomas Center for Business Excellence but remains a key research partner in the
Researchers from the three organizations held weekly meetings to develop and implement the surveys, conduct community assessments, analyze survey results, and plan for the dissemination of findings to community stakeholders.

The core partners also formed partnerships with CBGH and BHCAG to gain access to purchasers in the community. The two purchaser coalitions hosted in-person meetings for the project team to present findings from the assessment of community activities in P4P, public reporting, and tiered network strategies. The team formed a close relationship with CBGH in Colorado, and the director of the purchaser coalition was actively involved in interviewing community stakeholders and analyzing the data. Relations with BHCAG in Minnesota were not as close because the organization was more focused on national issues.

### Table 1. Major Partner Organizations and Roles in the Project

<table>
<thead>
<tr>
<th>Organization</th>
<th>Role in Project</th>
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<tr>
<td><strong>Lead Organization</strong></td>
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</table>
| HealthFront (grant recipient) | • Responsible for project administration, coordination, research support, and employer liaison  
• Assessed current state of P4P, public reporting, and tiered networks in Minnesota and Colorado through interviews with health plans and purchasers  
• Reported on information from physician survey in Minnesota to purchasers and health plans to solicit stakeholder reactions and feedback |
| **Key Collaborators** | |
| Park Nicollet Institute (PNI), Director, Health Systems Studies David Knutson | • Health care services research center conducted research and survey design, financial analysis, and economic research, and was liaison with CMS and national research community  
• Developed physician surveys, fielded surveys, and analyzed findings  
• Participated in meetings to present findings from survey to stakeholders in MN |
| National Institute of Health Policy (NIHP), Exec. Dir. Daniel McLaughlin | • University-based health policy research center (affiliated with University of St. Thomas, MN) provided liaison with CMS, health plans, Medicaid programs, policy, and educational institutions  
• Helped gain access to health plans and other stakeholders for interviews to assess the status of P4P, public reporting, and tiering in Minnesota  
• Hosted expert panel meetings to discuss findings and future steps for research; helped to analyze findings |
| Colorado Business Group on Health (CBGH) | • Helped access stakeholders in the market, including health plans, purchasers, and physicians  
• Participated in interviews with stakeholders and helped to analyze findings  
• Hosted the meetings to present information from assessment to CO community |
| Buyers Health Care Action Group (BHCAG) | • Hosted the meetings to present information from assessment to MN purchaser community |
Table 1 (continued)

<table>
<thead>
<tr>
<th>Organization</th>
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<tbody>
<tr>
<td><strong>Target Organizations</strong></td>
<td>- Purchasers, plans, and physicians were interviewed by project staff to assess the community incentive environment in these markets</td>
</tr>
<tr>
<td>Purchasers, health plans, physicians in the Minnesota health care market (in 2 areas: Minneapolis/St. Paul and rural western Minnesota)</td>
<td>- Received information from the project’s assessment of incentive environments</td>
</tr>
<tr>
<td>Purchasers, health plans, and physicians in the Colorado health care market (Denver)</td>
<td>- Physician groups were surveyed for their perceptions on the use of incentives</td>
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</table>

3. **Project Evaluation Outcomes/Results**

Information from the community assessments was presented to purchasers and plans in each market. However, the information did not prompt discussions about value-based purchasing between purchasers and plans. Although health plans in both communities are now working to achieve more consistency in measures used for P4P, public reporting, and tiered strategies, the work is not the direct result of the project findings. In both Colorado and Minnesota, purchaser groups decided to work through the Bridges to Excellence program, rather than directly with health plans. In Colorado, however, project partners believe that grant activities contributed to the community dialogue that led to its decision to participate in the Bridges to Excellence program.

Researchers believe that information from the physician surveys on how they respond to payment incentives has the potential to affect purchaser behavior regarding value-based purchasing. Particularly in Colorado, where the implementation of incentive programs was less advanced, the fact that employers are now engaged in an active dialogue with the medical community regarding value-based purchasing is directly attributable to the project. This dialogue, in turn, creates employer demand for such programs to be introduced by insurers and the discussion facilitates and informs implementation of these programs by educating the providers. The plan is to follow up to determine to what extent purchaser or health plan activities can be attributed to survey information. The Colorado physician survey was completed by August 2006 and the results were presented in September 2006 at a meeting of the Colorado Business Group on Health, and at the Annual Meeting of the Colorado Medical Society. Both the employer members of the CBGH and, the leadership of the Colorado Medical Society in particular found the results of the survey enlightening. Researchers are drafting papers for submission to a peer-reviewed journal to include discussion of (1) the purchaser response to information on value purchasing, (2) results of the medical group manager and physician surveys, and (3) an exploration of the relationships between market penetration, alignment of incentive programs, and provider perceptions of them.

4. **Major Products**

- Medical group manager survey tool
- Physician survey tool
- Research findings regarding the responses of large and small medical groups to quality incentives, and recommendations from the provider community about desirable and actionable design features of quality incentives
- Summary of an expert panel discussion that identified the best ways for purchasers to provide incentives to providers, and potential unintended consequences that plans and purchasers policymakers need to guard against
- Presentation of physician survey results to Colorado Medical Society, September 16, 2006
5. Potential for Sustainability/Expansion after PFQ Grant Ends

Purchasers in Minnesota, including the Buyers Health Care Action Group, have expressed interest in having the researchers conduct a second round of the physician survey. The National Business Coalition on Health, a national non-profit membership organization of employer-based health coalitions, has expressed interest in working with the project’s researchers to disseminate information to support its member coalitions in trying to improve quality through P4P, public reporting, and tiered network strategies. The Colorado Medical Society has asked the team to write articles for its member publications and is interested in working with the researchers and the CBGH to continue the dialogue with physicians. The project team plans to conduct mini-case studies of local markets, how purchasers are using incentives, and how providers respond to them. The team is developing an online course on pay-for-performance directed toward an audience of physicians and medical group managers to be offered by the University of St. Thomas. This online course builds on the team’s experience with the online expert discussion panel sponsored by the University in 2004.
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1. Project Description

**Goals.** This project incorporated research findings from the National Pressure Ulcer Long-term Care Study (NPULS) (1996) into routine, evidence-based best practice in long-term care (LTC) facilities. The project standardized front-line documentation and used this information to produce weekly reports to support clinical decision-making and care planning. Through a staged approach, the project facilitated clinical process and workflow redesign, introduced technology tools that assisted providers in identifying high-risk residents, and empowered front-line staff to take appropriate and timely prevention or treatment actions. Ultimately, the project aimed to redesign clinical workflow—instead of concentrating on improving existing processes only—to reduce the incidence of pressure ulcers among LTC residents in nursing homes.

**Activities and Progress.** The project leadership team was led by ISIS; the co-PI at IFAS/AAHSA was involved in overall project assessment and promotion of project activities. The American Health Quality Association (AHQA) provided assistance with dissemination of information regarding project activities, including presentations at AHQA national meetings and contact with the editor of the Provider publication.

In the first year, the project selected a pilot site, Memorial Hermann Spring Shadow Pines in Houston, TX, which formerly had worked with ISIS on the NPULS project. Project staff designed scannable, comprehensive documentation forms for Certified Nursing Assistants (CNAs) and tested them at one nursing unit in the pilot site. AAHSA’s Institute for the Future of Aging Services took the lead in recruiting and screening additional nursing homes for participation in the project, and ISIS used various networks to recruit study participants, including some affiliated with a PFQ grant recipient in Ohio. By April 2003, five additional nursing homes in four states had been selected and had agreed to participate. By May 2004 (the second year of the project), 20 units in 12 nursing homes from 10 states had been selected to participate. The project began instituting systems to streamline documentation for CNAs and nurses. For CNAs, multiple logbooks, clipboards, and notebooks were consolidated into a single documentation instrument that included meal and fluid intake, weight, bowel and bladder incontinence, and behavior observations. Nurses consolidated information into a CareGiver Guide that included pressure ulcer risk factors, medications, nutritional...
supplements, and fluid intake. ISIS assisted with facility-requested customization of the standardized forms. Clinicians used optical character recognition (OCR) forms, which allowed facility staff to use the familiar method of documenting on paper, and faxed them to ISIS where software exported the data to a database. ISIS generated weekly facility-specific reports and provided help with report interpretation to follow clinical best-practice guidelines at each facility. It also collected baseline data for evaluation, and began developing plans to sustain the process at the facility and unit levels.

In the third year, the project held its second and third project meetings (November 2004 and April 2005); most participating facilities sent one or more representatives to share progress, challenges, and outcomes. Many facilities expanded the use of CNA documentation forms to additional units, and some used the forms facility-wide. Completeness rates varied; some facilities were very high (rates of more than 95%) and others were lower (50 to 60 percent). Facilities shared experiences with comprehensive documentation and gradually decided to use the same documentation forms, so that standardization was achieved. The standardized CNA form replaced other forms and became part of the resident’s medical record at each facility. Most facilities began to incorporate data from the six ISIS-generated reports on resident status into daily or weekly resident care planning, which allowed staff to identify triggers for specific protocol steps to reduce the risk of pressure ulcers.

During the last year of the project, the focus shifted to sustaining project activities in participating facilities. ISIS helped facilities to explore ways of managing/sustaining process improvements without ISIS support, as for example through electronic medical records or digital pen technology. (See below, under Potential for Sustainability/Expansion.)

2. Partnership Structure/Function

The project formed an Advisory Committee to provide input and guidance on standardized documentation, implementation approaches, and analysis of results. Members included representatives from AMDA (medical directors of LTC facilities), academic researchers, a foundation representative, and the executive of a health care IT company. In addition, the project organized a Working Group, comprised of representatives of participating nursing home sites, and including some combination of the facility’s medical director, Director of Nursing, administrator, and MDS coordinator. According to a grantee report: “Another layer of partnerships exists within each facility. Each facility convened a QI team that is multi-disciplinary and includes all members of the care team, i.e., administrators, nurses, nursing assistants, social workers, MDS coordinators, dieticians, etc. This representation of all, especially front-line workers, is an atypical approach to QI efforts.” The first project meeting included Advisory Committee members and facility representatives.

Table 1. Major Partner Organizations and Roles in the Project

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<tr>
<th>Organization</th>
<th>Role in Project</th>
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<tr>
<td><strong>Lead Organization</strong> (grant recipient)</td>
<td>International Severity Information Systems (ISIS)</td>
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<tr>
<td></td>
<td>• Project management; convening Advisory Board and Working Groups of participating facilities</td>
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<tr>
<td></td>
<td>• Support to each participating facility to develop and process forms for each resident, generate reports, work with staff at all levels on implementation of facility-specific work plans</td>
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<td></td>
<td>• Lead effort to sustain project activities</td>
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<tr>
<td><strong>Key Collaborators</strong></td>
<td>Institute for the Future of Aging Services/ AAHSA</td>
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<tr>
<td></td>
<td>• Project guidance and support for establishing partnerships with project sites; recruit and screen project sites</td>
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<tr>
<th>Organization</th>
<th>Role in Project</th>
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<tr>
<td><strong>Key Collaborators</strong> (continued)</td>
<td><strong>American Health Quality Association</strong></td>
</tr>
<tr>
<td></td>
<td>• Provided assistance with dissemination and outreach for project activities, including presentations at AHQA national meetings and contact with editor of the Provider publication; also was a conduit to key leaders of nursing home trade associations</td>
</tr>
<tr>
<td><strong>Target Organizations</strong></td>
<td><strong>8-12 nursing homes and, in some cases, their corporate organizations</strong></td>
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<td></td>
<td>• 11 nursing homes in 7 states implemented the intervention: developments/used OCR forms on resident functioning/risk factors for pressure ulcers, incorporated timely report information, and began to use or explore technology options to sustain project activities</td>
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<td>• Catholic Health Partners had 4 Ohio nursing homes participating in the project – provided a ‘learning-lab’ to examine how experiences of 4 facilities could serve as a model to standardize processes across an organization and to disseminate tools to other facilities</td>
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3. Project Evaluation and Outcomes/Results

The project’s evaluation design involved the collection of baseline and follow-up data on (1) clinical measures (pressure ulcer incidence acquired in or out of the facility); (2) utilization measures (hospital admissions and ER visits); (3) operational measures, e.g., number of forms used prior to intervention; and (4) annual turnover rates and staff satisfaction measures.

The combined average for 7 facilities that implemented project processes starting in April 2004 shows an overall reduction of 33% in the [CMS] quality measure (QM) of high-risk residents with pressure ulcer from pre-implementation to initial post-implementation time periods (through Quarter 3, 2005). Individual patterns for each facility show reduction in the pressure ulcer QM and percentage of high-risk residents with pressure ulcers. Pressure ulcer prevalence in participating facility units dropped to about 8.7% on average, compared to the national average of 14%, which remained flat over the life of this project. However, this may not be statistically significant because it is a small sample. Facilities that implemented the intervention more fully (e.g., regularly submitting forms, using the reports in regular care planning meetings) had better results—PU prevalence in the 5 to 6% range—than those that partially implemented the intervention.

These early findings were updated with Quarter 4, 2005 data to summarize overall impact to date (by facility) on CMS QMs related to pressure ulcers. It is important to note that the CMS QM for high-risk pressure ulcer includes in-house and externally acquired, as well as existing pressure ulcers, and is a measure for the entire facility. While this differs from the project’s primary clinical outcome measure (in-house acquired pressure ulcers on participating units), the project team hypothesized that participating facilities focused improvement efforts on the unit(s) with highest risk residents; therefore, the interventions would impact the CMS QM for high-risk residents. Individual patterns for most facilities show reduction in the pressure ulcer QM percentage of high-risk residents. During Quarter 3, 2003, only two facilities were below the national average. For Quarter 4, 2005, six facilities were below the national average. All project facilities that have prevalence rates equal to or greater than the national average have decreased their prevalence from Quarter 3, 2003 by an average of 38%.

In addition to decreased pressure ulcer development, the project reduced the number of documentation forms that CNAs fill out at each facility, which reduces paperwork burden and provides more time for hands-on care to residents. Information about residents is now available in “real-time”; quality improvement has shifted from reviewing data quarterly on a retrospective basis to using weekly clinical reports for timely resident care planning by all members of the care team. Communication among
the care team reportedly has improved and collaboration across team members has increased. Data needed for CMS and state survey reports are captured more easily and are readily available.

4. **Major Products**

The workflow change process of using standardized documentation and timely feedback reports for improved care planning has been presented at many national conferences, including the 2004 and 2005 Annual Research Meetings of AcademyHealth, the Spring 2004 and 2005 AAHSA Future of Aging conferences, the 2005 AAHSA Annual Meeting, AHRQ’s Translating Research into Practice meetings in July 2005 and 2006, and the Gerontological Society of America annual conferences in November 2005 and 2006.

5. **Potential for Sustainability/Expansion after PFQ Grant Ends**

Among the 11 facilities that participated in the project, four will not be involved in future spin-off projects, primarily because of turnover in the Directors of Nursing, who are key decision makers in nursing homes. The remaining facilities are joining ISIS in a new Health Information Technology (HIT) project to continue the standardized documentation and reporting processes begun in this project; HIT is funded by AHRQ.

Half of the participating facilities were part of larger systems or corporate chains. This allowed corporate leaders to watch ‘the experiment’ and decide if it was worth adopting corporate wide. The Good Samaritan Society (GSS) was impressed enough to adopt the tools; according to the PI, 240 GSS facilities in 25 states are now using the same approach to documentation. Mercy Health Partners, which had four facilities participating in the project, is rolling it out to more of their long-term care facilities. In addition, standardized comprehensive documentation by front-line staff, followed by timely reporting, has changed facility workflow. While designed around pressure ulcer prevention, it is applicable and helpful across clinical areas. It is being used to facilitate improved resident care and better responsiveness to federal reporting requirements.

Towards the end of the project’s third year, ISIS had discussions with the Arizona QIO and initiated calls with QIOs in California, MD-VA-DC (Delmarva), Ohio, Texas, North Carolina, Idaho, Washington, and Rhode Island to explore their interest in replicating the model through the QIOs’ nursing home quality improvement activities. These discussions led ISIS to submit a separate contract proposal to launch this new approach to replication. AHRQ funded the contract, which began in September 2005. ISIS is working with California (Lumetra), Idaho (Qualis), Texas, Maryland (Delmarva), North Carolina, and Arizona QIOs. The QIOs identified about 30 long-term care facilities; ISIS trains facility and QIO staff to help them implement the ‘Real-Time’ process using Digital Pen Systems or internal facility IT systems.

In the final grant year, the project intensified its efforts to disseminate project activities to other long-term care facilities. It will evaluate results and develop a plan for ongoing initiatives to continue expanding the number of participating sites, evidence-based medicine content, and data collection and reporting improvements. To accomplish this, the ISIS project team is working in partnership with the AHRQ-funded contract to Delmarva Foundation for Medical Care, contract #290-04-0009, ‘Real-Time Prevention of Pressure Ulcers,’ which was funded in May 2006.
1. Project Description

**Goals.** This project had two distinct components. The first sought to **evaluate the impact of evidence-based performance measurement on perceptions about and the perceived value of quality improvement efforts.** For this component, the project examined evidence-based process-of-care practices for five core performance measure sets: acute myocardial infarction, heart failure, pneumonia, pregnancy and related conditions, and surgical infection prevention. It analyzed relationships between core performance measure data and perceptions about their value, actions taken, and the impact of interventions. The second project sought to assess the **existence of linkages for emergency preparedness** between health care organizations and community responders and other stakeholders, including public health, public safety, and governmental administrative agencies. This component planned to compare these linkages in communities that had experienced a disaster with those that had not, and identify exemplary practices.

**Activities and Progress**

*Performance Measurement Project.* In Year 1, to determine the accuracy, completeness, and reliability of core measures records abstraction, JCAHO project staff re-abstracted up to 30 medical records at 30 randomly selected test hospitals for JCAHO core measure sets in acute myocardial infarction (AMI), heart failure (HF), community-acquired pneumonia (PN), and pregnancy and related conditions (PR). Project staff compared results of the re-abstractions, data element by data element, to the original hospital data abstraction. Following this, 90 hospitals conducted their own re-abstraction of the core measure data. In Years 1 and 2, project staff analyzed the data and conducted interviews with hospital staff to discuss discrepancies and identify systemic issues with the data collection process.

During Years 1 and 2, surveys were sent to approximately 1,971 hospitals to investigate staff perceptions of quality improvement efforts and the value of core performance measurement and actions taken in response to the measurement process. The results were compared to hospitals’ performance measure data. Project staff conducted site visits to 40 of the hospitals that completed the survey (36 on-site and 4 teleconference visits). During Year 3, invitations to participate in an online survey were sent to the same hospitals. In Years 3/4, in-person interviews were conducted at 29 hospitals, representing a mix of those with high perception/high performance and those with low perception/low performance. The in-
person interviews were extensions of the surveys, providing more detail about factors influencing perceptions and performance. Data analysis is ongoing and will be completed during the one-year no cost extension.

**Bioterrorism Preparedness Project.** In Year 1, the project assembled a Technical Expert Panel (TEP) comprised of nine panel members representing a range of organizations and professions, including hospital administrators, emergency response personnel, local and state public health officials, and law enforcement, and engaged a project consultant. The grantee, with assistance from the TEP, developed a framework of seven major topic areas to be used in assessing the existence of linkages among health care organizations, community responders, and stakeholders, and to identify exemplary practices.

In Year 2, based on the TEP’s recommendations, the grantee developed a questionnaire to be sent to a randomly selected sample of U.S. accredited and unaccredited medical/surgical hospitals from the American Hospital Association database. Prior to implementation, the questionnaire was pilot-tested. The project team invited 1,750 hospital CEOs to participate in the study, and the final questionnaire was mailed to the CEO-designated contact person for the 678 hospitals that agreed to participate. Representatives of 575 hospitals returned completed questionnaires. The project team analyzed the data to determine the prevalence and breadth of hospital and community linkages related to emergency preparedness. The aggregate results were sent to participating hospitals when they agreed to participate in the study.

In Year 3, project staff continued to analyze the data from the hospital questionnaires and developed and submitted a manuscript describing the results of the hospital analyses. Project staff also identified potentially innovative practices for inclusion in the Joint Commission publication, *Standing Together: An Emergency Planning Guide for America’s Communities*.

Also in Year 2, the grantee assembled a new Technical Expert Panel subgroup for assessing community emergency preparedness linkages in health centers. The eight-member panel drew on both existing TEP members and referrals from the TEP, including an expert from the Health Resources and Services Administration (HRSA) to lead the subgroup. This new subgroup examined the hospital questionnaires and provided feedback and suggested revisions for the resulting 60-item questionnaire to be implemented in federally funded health centers. In Year 3, the grantee mailed the health center questionnaires to the executive directors of 890 federally funded CHCs, of which 307 responded. The project staff worked with the TEP subgroup for health centers to develop a strategy for analyzing data. The remainder of Year 3 was used to conduct an initial health center data analysis, to convene the health center TEP subgroup for a discussion of aggregate findings, and to develop and disseminate these findings.

A request for a six-month no-cost extension (to March 2006) of the bioterrorism component of the grant was requested following the scheduled project-end date of September 30, 2005; this allowed completion of (1) multivariate analysis of health center data, (2) identification of innovative health center practices, (3) manuscript preparation (health center results), (4) dissemination of innovative health center practices, (5) continued preparation and finalization of project report, and (6) presentation of findings.

2. **Partnership Structure/Function**

JCAHO was the primary leader and actor for both studies funded under this grant. The JCAHO project team did not have any partners for the performance measurement project, although it viewed the grant funding as an opportunity to get feedback from hospitals on JCAHO’s required performance measures, and how they might be improved for use in quality improvement activities. For the bioterrorism preparedness project, the grantee convened an advisory TEP and TEP subgroup. The TEPs met with the JCAHO project staff approximately every six months.
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<tr>
<th>Organization Role in Project</th>
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<tbody>
<tr>
<td><strong>Lead Organization</strong> (grant recipient)</td>
</tr>
<tr>
<td>• Developed questionnaires, conducted and provided general oversight for the studies</td>
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<tr>
<td>• Wrote reports and disseminated results</td>
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<table>
<thead>
<tr>
<th><strong>Key Collaborators</strong></th>
<th>Bioterrorism Project: Technical Expert Panel (TEP) - Hospitals Technical Expert Panel Sub-Group – health centers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Advisory group included AHA; helped to construct hospital questionnaire and guide analysis</td>
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<tr>
<td>• Advisory group of health center representatives, including DHHS/HRSA’s Bureau of Primary Health Care; helped to construct health center questionnaire and guide analysis</td>
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<table>
<thead>
<tr>
<th><strong>Target Organizations</strong></th>
<th>Performance Measurement Project: Nearly 1500 hospitals participated in the 2 surveys; 69 hospitals participated in the in-person interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Conducted data abstraction and re-abstraction; completed surveys and submitted them to project staff; identified participants for the in-person interviews. (The 29 interviews in the second round of in-person interviews each took approximately 2 hours to complete.)</td>
<td></td>
</tr>
<tr>
<td>• Completed questionnaire and submitted results to JCAHO project staff</td>
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<tr>
<th><strong>Bioterrorism Preparedness Project</strong></th>
<th>1,750 (random sample) Joint Commission accredited and unaccredited hospitals; 890 (population) federally funded health centers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Completed questionnaire and submitted results to JCAHO project staff</td>
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3. Project Evaluation and Outcomes/Results

*Performance Measurement Project.* The baseline level of data reliability appears to be acceptable for measures used to assess and improve hospital performance. Twenty of 21 performance measures examined showed no statistically significant differences when comparing originally abstracted with re-abstracted data using the Chi-Square test statistic for rate-based measures and the Wilcoxon test statistic for continuous variable measures. The one statistically different measure reflected higher performance measure rates when derived from the originally abstracted data (p <0.05). The mean data element agreement rate for the 61 data elements evaluated was 91.9 percent and the mean kappa statistic for binary data elements was 0.68. Preliminary findings indicate that overall data element agreement rates varied among measure sets and, in general, JCAHO independent abstractors identified more data element discrepancies than did the self-re-abstractors; in other words, it was found that hospital self-abstracted data was fairly accurate and reliable, although it was better when a third party conducted the re-abstraction. This information is important to those considering payment tied to performance measures.

For the first survey, project staff received approximately 1,141 completed surveys from 851 hospitals. From these respondents, a sample of 40 hospitals was recruited to participate in 36 in-person and 4 teleconference interviews. For the second survey, nearly 600 hundred hospitals responded and 29 in-person interviews were completed. Preliminary results suggest relationships between the perceived value of core measure sets and a variety of quality improvement actions. Further analysis will attempt to evaluate the relationships between improvement actions measure rates, as well as assessment of qualitative data obtained during the in-person interviews.

*Bioterrorism Preparedness Project.* Of the 678 hospitals that received questionnaires, 575 submitted completed surveys. The study found deficient linkages between hospitals, public health, and other critical response entities. The abstract of the article, published in *Annals in Internal Medicine*, June 2006 reported:
“In a weighted analysis, most hospitals (88.2%) engaged in community-wide drills and exercises, and most (82.2%) conducted a collaborative threat and vulnerability analysis with community responders. Of all respondents, 57.3% reported that their community plans addressed the hospital’s need for additional supplies and equipment, and 73.0% reported that decontamination capacity needs were addressed. Fewer reported a direct link to the Health Alert Network (54.4%) and around-the-clock access to a live voice from a public health department (40.0%). Performance on many of 17 basic elements was better in large and urban hospitals and was associated with a high number of perceived hazards, previous national security event preparation, and experience in actual response.”

Of the 890 health centers that received questionnaires, 307 returned the survey. While 80 percent reported that their communities had a group or committee responsible for emergency preparedness or response planning, only 54 percent reported being represented in the group by either a staff member (46 percent) or by the Primary Care Association or network/consortium (8 percent). About half (54 percent) of health centers reported that the community had established a role for all (22 percent) or some (32 percent) sites in the event of an emergency. Thirty percent reported that their role had been documented in the local/county emergency operations plan. Twenty-seven percent had completed a collaboration threat and vulnerability analysis with community responders for all or some sites. Twenty-four percent of health centers reported that all (5 percent) or some (19 percent) sites had participated in community-wide drills/exercises since 2001. Thirty percent of responding health centers reported having responded to an actual public health emergency or disaster, while an additional 11 percent reported having responded to a potential or suspected emergency.

Stepwise logistic regression analysis also was performed. The main outcome variable for this analysis was a composite measure of the strength of community linkages. Having the highest cumulative linkages indicator score was associated with 7 items: health centers that had an emergency operations plan that was developed collaboratively with the community emergency management agency, and those that had participated in community-wide training, were 3.4 and 3.6 times more likely to have the highest summary indicator score, respectively. Those whose staff had seen the community emergency plan were nearly 3 times more likely to have the highest indicator score, and those who had staff who were involved in community planning were more than twice as likely to have the highest score. Health centers whose community plan addressed their health need for additional supplies and equipment were 3 times more likely to have the highest summary indicator scores. Health centers that reported having a community emergency management agency with the ability to reach a health center contact around the clock, and those that reported staff as present or being represented at the community emergency operations center during a response, were approximately 2.3 times more likely to have the highest summary indicator score.

4. Major Products

Performance Measures Project:


Bioterrorism Preparedness Project:


5. Potential for Sustainability/Expansion after PFQ Grant Ends

Research findings from these projects could generate new research opportunities following the end of the grant period. Some of the findings may be useful in developing research questions to evaluate relationships between core performance measures data and clinical outcomes, and in evaluating and designing pay-for-performance systems. Some say the survey instrument for the bioterrorism component is a useful checklist for hospital emergency preparedness measures. An examination of the depth of community linkages also could be undertaken.
PFQ GRANT SUMMARY
USING INCENTIVES TO DRIVE LEAPS IN PATIENT SAFETY

Lead Organization: The Leapfrog Group
Partner Team: Purchaser (employer) and payer (health plan) groups in 6 different markets; Evaluators/researchers from 3 universities; Consultants from Medstat, Towers Perrin, and Ropes & Gray
Title: Using Incentives to Drive Leaps in Patient Safety—Implementation Phase
Topic Area: Incentive and reward programs to motivate providers to improve quality
Principal Investigators: Suzanne Delbanco (Leapfrog)
AHRQ Project Officer: Michael Hagan
Total Cumulative Award: $1,295,537
Funding Period: 10/02–9/06
Project Status: Received no-cost extension until September 2007

1. Project Description
   
   Goals. This project began with a one-year “planning grant,” which developed and recruited payer and purchaser groups to pilot-test financial incentive and reward programs targeting hospitals and consumers, in order to speed the adoption of The Leapfrog Group’s recommended hospital patient safety practices. On behalf of the millions of Americans for whom many of the nation’s largest corporations and public agencies buy health benefits, The Leapfrog Group aims to use its members’ collective leverage to initiate breakthrough improvements in the safety, quality, and affordability of health care.

   The goal of the subsequent three-year “implementation grant” was to implement these pilot projects in at least six health care markets around the country and evaluate their effectiveness. Specific aims were to (1) document and understand payers’ and purchasers’ interest in incentive and reward programs, and identify organizational and market characteristics related to integrating such programs into their purchasing decisions; (2) document and understand the decision making processes purchasers and payers use to design and implement interventions aimed at improving hospital quality and safety; and (3) measure the impact of their interventions on employees’ choice of hospitals and hospitals’ adoption of Leapfrog’s recommended quality and patient safety practices.

   Activities and Progress

   Phase I pilots:

   - GE, Verizon, and Hannaford Brothers Collaborative/Albany-Schenectady market. These three large employers collaborated in designing and implementing a bonus program for hospitals and financial incentives for consumers to use hospitals meeting Leapfrog hospital patient safety standards. The group chose to use Leapfrog’s Hospital Rewards Program quality and efficiency measures in five clinical areas. Hospitals would be eligible for rewards based on how they performed in each of the areas. Leapfrog provided and arranged for technical assistance to this group, including hosting webcasts for local hospitals and health plans about the program, and conducting outreach to hospitals to solicit their participation. The pilot has not yet been implemented (it was on hold as of June 2006) because of hospitals’ reluctance to participate due to uncertainty about the availability of bonus funds, and because the data vendor has not yet agreed to release the data necessary to compile the measures. The evaluation team has monitored the pilot’s progress and had
planned to conduct a survey of hospitals regarding their willingness/unwillingness to participate, but this survey also is on hold.

- **Healthcare 21 (HC21) Business Coalition/Eastern and Central Tennessee.** This pilot worked to implement a “tier and steer” incentive program to direct patients to high performing hospitals. Leapfrog helped with measure development and legal assistance. HC21 constructed a consumer guide on selecting hospitals based on Leapfrog’s recommended patient safety practices (aka “leaps”), and has been working with a few employers on new benefit designs to encourage employees to use higher performing hospitals. The majority of employers, however, were wary of proceeding with any benefit plan changes because health plans in the state also are designing new benefit packages along these lines, a role that employers believe health plans are better suited to fill, and the project has stalled.

- **Boeing Company/Seattle, Wichita, Kansas and Portland, Oregon.** This pilot adopted a benefit differential to encourage certain members of its PPO to use hospitals that met Leapfrog’s quality and patient safety practices. Under an arrangement negotiated with two unions representing certain Boeing employees, the Hospital Safety Incentive allowed PPO-enrolled employees to obtain 100% coverage after the deductible for services in a “Leapfrog-compliant” hospital, versus 95% coverage in a non-compliant hospital. Boeing does not plan to continue the benefit design, but machinists with the benefit in their current contracts will retain the design for three more years. Boeing worked with Leapfrog, Medstat, and its plan administrator to identify which hospitals met Leapfrog’s standards. The evaluation team used a pre- and post-measurement design of employees affected and unaffected by the program. Boeing currently is examining the post-measurement results.

- **Maine Health Management Coalition (MHMC)/Maine.** This pilot created a bonus pool of about $1 million for high performing hospitals. Hospitals could receive bonus funds by meeting certain performance standards. The 10 participating hospitals and 9 participating purchasers contributed to the bonus pool; the funds from hospitals are redistributed from lower to higher performing hospitals with purchasers contributing some “new money.” Hospitals can lose their contribution if they do not meet certain performance thresholds, or gain a bonus for exceeding them. Medstat collected data to calculate a score based on patient satisfaction, patient safety, clinical measures, and efficiency. Leapfrog assisted with incentive and reward methodology and administration. Intended to begin in July 2005, the pilot’s implementation was delayed until 2006 when 2005 performance results were reported; Medstat issued the rewards in the summer of 2006. The evaluator tracked the pilot’s methodology and results, and conducted a survey of employers and hospitals involved in the pilot to determine their concerns.

Phase 2 pilots:

- **Blue Shield of California.** This pilot built on a hospital tiering program (Network Choice), which was developed using Leapfrog’s hospital patient safety measures. Blue Shield used the grant resources to develop a complementary “Physician Informational Tiering Project” to build awareness among physicians and Blue Shield plan members about the cost and quality differences between hospitals and ambulatory care facilities, and influence their choice of hospitals and ambulatory surgery centers. The project surveyed physician and member attitudes about the hospital tiering program to shape its design in the future. Despite a monetary incentive, Blue Shield has struggled to get physicians to participate in the survey.

- **Buyers Health Care Action Group (BHCAG)/Minnesota.** This pilot aimed to (1) measure and publicly disseminate market-, employer-, and plan-specific Opportunity Rate scores (the rate of admittance to Leapfrog compliant hospitals per opportunity), and (2) increase health
plan participation in efforts to improve hospital quality by linking the plans’ Opportunity Rate scores to the “buy” decision. (Health plans would be tracked using the National Business Coalition on Health’s eValue8 tool, which health plans use to submit information to purchasers about their clinical quality and administrative efficiency.) The pilot is based on other research showing that, even when hospital patient volume shifts do not occur as a result of incentives or quality information, measurement and public dissemination of performance data creates a competitive environment. Leapfrog provided ongoing assistance with updates and applications of the Leapfrog algorithm to calculate Opportunity Rates, as well as qualitative analysis and cataloguing of health plan and employer practices. The pilot is currently on hold because of turnover at Watson Wyatt, who is assisting BHCAG.

2. Partnership Structure/Function

The partnership consisted of the lead organization, The Leapfrog Group, founded in 2000 by The Business Roundtable to mobilize employer purchasing power to improve health care quality by recognizing and rewarding providers that take “big leaps” in advancing quality, patient safety, and affordability. Leapfrog recruited six groups from among its membership to conduct pilot projects; those selected included major employers (Boeing and the GE/Verizon/Hannaford Brothers group); three employer health coalitions (in Maine, Minnesota, and Tennessee) and one health plan (Blue Shield of California). Leapfrog arranged for technical assistance to the pilot projects by three groups of consultants: Towers Perrin (actuarial services), Medstat (data analysis), and Ropes and Gray (legal counsel).

Each pilot functions separately, but Leapfrog conducts monthly calls with the entire group, including external evaluators and some of the TA contractors. Leapfrog held in-person meetings with grant participants in February 2005 and January 2006 to discuss lessons learned and key takeaways. Leapfrog also wrote and distributed a newsletter in which they reported on the pilots’ progress and included links to tools and resources for the pilots.

In addition, Leapfrog engaged a group of three evaluators to conduct individualized process and outcome evaluations of each of the pilots. The evaluators communicated weekly with Leapfrog. With some of the pilots, the evaluators acted both as consultants and evaluators. In Maine, for example, the evaluators attended meetings and participated in teleconferences to provide formative feedback. For the GE pilot, the evaluators also acted as consultants and held discussions with them, attended meetings, and provided feedback. Other pilots, such as BHCAG and HC21, did not ask evaluators for assistance.

Table 1. Major Partner Organizations and Roles in the Project

<table>
<thead>
<tr>
<th>Organization</th>
<th>Role in Project</th>
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<tbody>
<tr>
<td><strong>Lead Organization</strong></td>
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<tr>
<td>(grant recipient)</td>
<td>The Leapfrog Group</td>
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<tr>
<td></td>
<td>• Lead and coordinate grant activities; provide TA to pilot sites and oversee other TA and the evaluation team</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong></td>
<td></td>
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<tr>
<td>Pilot Groups: 2 large employers, 3 business coalitions, and 1 health plan in CA, KS, ME, MN, NY, OR, TN, WA</td>
<td>• Implement hospital incentive and reward programs in their respective markets</td>
</tr>
<tr>
<td>Evaluator</td>
<td>• Evaluate pilots; develop case studies: Dennis Scanlon (Penn State), John Christianson (U. Minnesota), Eric Ford (Tulane-Texas Tech)</td>
</tr>
<tr>
<td>Consultants</td>
<td>• Help Leapfrog provide TA through actuarial help (Towers Perrin); data analysis (Medstat Group), and legal assistance (Ropes and Gray)</td>
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<tr>
<td><strong>Target Organizations</strong></td>
<td></td>
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<tr>
<td>Hospitals and selected other providers in the 6 health care markets</td>
<td>• Report data on performance measures selected by each purchaser group; adopt Leapfrog or other hospital quality and patient safety standards</td>
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</table>
3. Project Evaluation and Outcomes/Results

Only two of the projects (Boeing and MHMC) have reached implementation stage and have been fully evaluated; the evaluation of a third pilot project (Blue Shield of CA) is not yet complete. However, all six of the pilots provided insights or lessons as to the challenges of implementing incentive and reward programs through multi-stakeholder efforts. The evaluators found the following results:

- **Boeing:** Leapfrog expected the Boeing pilot to produce the most rigorous empirical findings about the impact of incentives on behavior in the health system, because the evaluation compared the program’s effects on employees in the PPO with modified hospital benefit to those in Boeing’s regular PPO. However, the evaluation did not find that the program had any effect on consumer choice of hospital, primarily because employees’ physicians did not refer or admit them to the higher performing hospitals. Employees would not use hospitals where their physicians did not practice, regardless of the extra cost. In addition, only a few hospitals in the three Boeing markets qualified for the bonuses, so there were not enough options for consumers or physicians. These findings may be useful to other organizations seeking to alter health benefit designs so as to shift market share to better performing hospitals.

- **MHMC:** Interviews with program participants (hospitals and employers) revealed satisfaction with the pilot’s leadership and its structure, including the choice of measures, weighting of the measures, and funding. There was uncertainty among participants about whether the pilot should continue, with many citing the need for information about the pilot’s outcomes. The interviews provided insight into reasons such a pilot may be unsustainable, including: insurance companies developing similar programs; administrative burden/costs being too high; performance measures being publicized and misinterpreted by the public; and the need for new bonus money not being sustainable. Many respondents felt the pilot was valuable in that it sent a signal to health plans about the interest in having transparent and standardized measures and receiving rewards based on those metrics. Without involving the health plans, however, many felt the program would not be sustained. These findings from the interviews offer lessons to similar incentive programs, particularly the need to involve hospitals, purchasers, and health plans.

- **Blue Shield of CA:** When completed, the physician survey will provide lessons on physicians’ awareness of the variation in hospital quality and safety and offer input into the design of an insurance product that gives physicians incentives to steer patients to higher performing hospitals.

Although the three other pilots have stalled, they do offer lessons regarding the barriers that such purchaser-led efforts face. For example, leadership constraints can impede progress, particularly if those negotiating with hospitals and health plans lack the authority to make decisions and enforce them in their organizations and benefit plans. In addition, purchaser-led efforts to establish performance standards may run into stakeholder opposition; at least one of the pilots encountered resistance from hospitals regarding participation in the program. Strong leadership may help with participation, but resistance is still likely. One pilot found it more difficult than originally anticipated to align standards and monetary incentives for providers. As the evaluators learned, hospital administrators do not think that current performance measures are accurate, so they are unlikely to support reimbursement models that put significant money at risk until measurement is more sophisticated. Further, employers are unlikely to sustain incentive programs without a positive return on investment.
4. **Major Products**

The following publications are planned but not yet complete:

- Boeing Pre- and Post-Survey Analysis (estimated completion date Summer 2006; we had not heard as of October 2006 if this was completed)
- MHMC Pilot Case Study (estimated completion date Fall 2006)
- A Multi-Purchaser Incentive and Reward Program: Challenges and Barriers to Achieving Results (from GE, Verizon, Hannaford Brothers pilot – estimated completion date September 2006; we had not heard as of October 2006 if this was completed)
- Assessing Doctors’ Potential Use of Comparative Patient Safety, Cost, and Quality Reporting in California Surgery Centers (from Blue Shield pilot – estimated completion date November 2006)
- Promise and Problems with Supply Chain Management Approaches to Health Care Purchasing (from GE, Verizon, Hannaford Brothers pilot – completion date TBD)
- The documents below were presented at Leapfrog’s Incentives and Rewards Workshop in July 2006:
  - “Incentives and Rewards Best Practices Primer: Lessons Learned from Early Pilots,” The Leapfrog Group (lessons based on the 6 PFQ pilots and 7 in RWJF Rewarding Results program)
  - “The Leapfrog Group’s Incentive and Reward Pilots: Key Lessons Learned.”

5. **Potential for Sustainability/Expansion after PFQ Grant Ends**

Leapfrog will not be sustaining the program, but some of the individual pilots will likely continue. Leapfrog’s idea for the program was to start new projects and learn what it could from them. Since the pilots began, the movement for incentives has taken off and Leapfrog feels there is no need to continue them. They have used the lessons from the pilots to refine the design of the Leapfrog Hospital Rewards Program so, in that sense, the program is continuing. Furthermore, all of the pilots will continue their relationship with Leapfrog, since they are also members of Leapfrog’s Regional Roll-Out program, in which Leapfrog employer members work with other local employers, as well as local hospitals, health plans, physicians, unions, consumer groups, and others, to implement the Leapfrog action plan in their region.

MHMC will meet in August 2006 to decide whether to sustain its program, and if so, how best to involve the major health plans in Maine and additional employers. Blue Shield of California is using the survey feedback to support its ongoing pay-for-performance agenda. Boeing’s benefit design is in place for certain employees for three additional years, but the company does not plan to continue or expand the design for other employees.
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1. Project Description

**Goals.** The project had two major goals: (1) to provide a packaged educational intervention to improve primary care physicians’ (PCP) management of their diabetic patients in order to improve patient health status and (2) to devise a cost-efficient model of intensive intervention that could be delivered in primary care physician practices, which is where the majority of diabetes patients receive care. The project aimed to design, implement, and evaluate a diabetes management model that would deliver to diabetes patients (Type 2 only, excluding the very highest-risk patients) in primary care practices the same type of support (via referral to the regional diabetes center) received by high-risk diabetic patients.\(^4\)

**Activities and Progress.** In the first year, diabetes educators from the Helwig Diabetes Center at LVHHN provided intensive team-based education with primary care physicians in four practices in two phases. In the first phase, called “intensive education,” which lasted for three to six months, a Certified Diabetes Educator (CDE), nutritionist, and diabetes physician specialist conducted an initial assessment of the practice; recommended practice-specific process improvements; provided structured education for clinicians, other staff, and patients; and conducted biweekly case review. The CDE worked on site 16 to 24 hours per week. In the phase called “education reinforcement,” the CDE was on site for eight hours per week for the next six to nine months, providing patient-specific problem solving and episodic consultation with an endocrinologist. Patient group visits, delivered by a team consisting of an educator, dietician, and support staff, were initiated in the four practices with 10 to 15 patients in each group.

In the second year, the project introduced the same model in another six primary care practices but with a “refined model” that used Achievable Benchmarks of Care (ABC\(^{TM}\)) to motivate improved

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\(^4\) The project was terminated shortly after the end of the second year of the grant, eight months after the principal investigator died. Had the project continued into the third and fourth years of the grant (after December 2004), it would have addressed several additional goals: (1) to evaluate the sustainability of models of care for improving primary care diabetes management, (2) to disseminate the model to other systems in southeastern Pennsylvania (16 practices and over 3,000 individuals in conjunction with the LVHHN Physician Hospital Organization), and (3) to disseminate the lessons learned to a national audience.
physician clinical performance and patient health outcomes. ABC sets a benchmark for care based on best practices of local or regional peers and, to motivate physicians, provides them with reports on how they compare to their peers. ABC reports, prepared by a Penn State College of Medicine biostatistician, were distributed to the six PCP practices, which received ongoing feedback on their progress.

2. Partnership Structure/Function

A project advisory committee was established to review project successes, barriers, data, and general operations and budget. Members included the principal investigator, co-investigator, medical director of the Helwig Diabetes Center (Dr. Merkle), project director and project coordinator from Helwig, medical director of the Lehigh Valley Physician Hospital Organization, and two advisors from Penn State University: Pamela Short, Department of Health Policy Research, and Robert Gabbay, MD, College of Medicine. LVHHN’s relationship to the primary care practices was primarily limited to providing technical assistance and clinical practice support. Neither PCPs nor patients appeared to have any input into program design, assessment, or modification.

Table 1. Major Partner Organizations and Roles in the Project

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<th>Organization</th>
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<tbody>
<tr>
<td><strong>Lead Organization</strong>&lt;br&gt;(grant recipient)</td>
<td>Lehigh Valley Hospital and Health Network&lt;br&gt; • Project management, planning/development, and leadership; chair of Advisory Committee. When Dr. Young died, Dr. Kenneth Coburn of Health Quality Partners assumed the administrative and leadership roles for the project, but for only four months.</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong></td>
<td>Helwig Regional Diabetes Center at LVHHN&lt;br&gt; • Project director and project coordinator based at Helwig Diabetes Center staffed and coordinated delivery of diabetes interventions in PCPs, monitored progress, and helped collect data for evaluation.</td>
</tr>
<tr>
<td><strong>Target Organizations</strong></td>
<td>Primary care practices in southeastern Pennsylvania&lt;br&gt; • Ten primary care practices in southeastern Pennsylvania participated in the first two years; had the project continued, another eight PCPs were supposed to be added in years 3 and 4, and plans would have called for rolling out the project region-wide through the Physician Hospital Organization (PHO) affiliated with LVHHN.</td>
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3. Project Evaluation and Outcomes/Results

**Structure/Process of Care.** In February 2004 the project submitted data to the Agency for Healthcare Research and Quality showing promising improvements in the percent of physicians in the first four practices who were screening for glycosylated hemoglobin (HbA1c) and lipids, but not for micro-albuminuria, per the time line set forth by the American Diabetes Association guidelines. On the Achievable Benchmarks of Care scores, physicians in the top-performing groups remained near the top while those in lower-performing groups showed improved scores. An initial assessment of the financial feasibility of providing group visits in private practice settings indicated that 12 patients per group provide income comparable to routine office visits, demonstrating that “a replicable and sustainable financial model has been developed.”
Outcomes of Care. Data on HbAlC levels, lipids, and blood pressure were monitored at baseline and then at 6 and 12 months after the intensive education phase of activities in the primary care practices. In February 2004, the data showed an increase in patient adherence to guidelines and statistically significant improvement in all the core clinical measures: blood pressure, lipid levels, cholesterol, triglycerides, and hemoglobin. In the absence of a control group, the project “corrected for the regression to the mean.”

4. Major Products

- Presentation on the project delivered at the American College of Physicians, spring 2005.

5. Potential for Sustainability/Expansion after PFQ Grant Ends

Project representatives report that the intervention remains in place in the 10 participating primary care practices. The project’s financial sustainability study showed that group visits by patients to receive diabetes education are billable services and can generate enough revenue that primary care practices can sustain the model. The project demonstrated a model of providing chronic care to diabetes patients that could be replicated by other specialty diabetes centers working in conjunction with primary care practices; however, project representatives were not aware of any other centers that had done so.
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PFQ GRANT SUMMARY
DIFFERENT APPROACHES TO INFORMATION DISSEMINATION

Lead Organizations: New York State Department of Health (NYSDOH) (through Health Research Inc.)

Partner Team: Research Division of the Hebrew Home for the Aged at Riverdale (RDHHAR), Columbia University Stroud Center, New York State Psychiatric Institute, American Health Care Association (AHCA), Association of Health Facilities Survey Agencies (AHFSA), Institute for the Future of Aging Services, and The Commonwealth Fund

Title: Different Approaches to Information Dissemination

Topic Area: Implementation of evidence-based long-term care practices in nursing homes and adult care facilities in New York State

Principal Investigators: Beth Dichter, PhD, NYSDOH (formerly Suzanne Broderick); with co-principal investigators from RDHHAR: Douglas Holmes, PhD, and Jeanne Teresi, EdD, PhD

AHRQ Project Officer: Margaret Coopey

Total Cumulative Award: $1,161,932

Funding Period: 9/02–9/06

Project Status: Grantee has a no-cost extension through September 29, 2007, to conduct and complete data analysis

1. Project Description

   Goals. The project aims to evaluate two methods for disseminating best practices to nursing homes and adult care facilities. The research design is quasi-experimental with two intervention groups and a comparison group. Each group includes 15 nursing homes and 7 adult care facilities (ACFs), for a total of 45 nursing homes and 21 ACFs. The first intervention group received special training modules provided to facility in-service educators. The second intervention group received the same special training modules while the state surveyors responsible for quality assurance in the facilities also underwent training on the modules. The comparison group conducted its own training as required by state regulations, on topics selected by each facility. The project will make pre- and post-training comparisons of staff knowledge of accident/fall prevention and conditions (e.g., vision disorder, affective and behavioral states) that may increase the risk of accidents/falls as well as comparisons between control and experimental groups (see below).

   Researchers hypothesized that training modules provided to nursing homes and ACFs in the experimental groups, as compared to the control group, would enhance quality of life for residents as measured by the reduction in indicators such as accidents/falls and by secondary quality indicators, including behavior and affect. The primary outcome was reduction in accidents/falls.

   Activities and Progress

   Year 1. Delays in the release of AHRQ grant funds delayed the start of project activities by about six months. By March 2003, the project had convened an Advisory Group comprising representatives of project partners and other stakeholder organizations. Project staff conducted an exhaustive search for evidence-based best practices in long-term care. Through careful screening and scoring on criteria such as cost, whether the module was indeed evidence-based (as determined by results reported in peer-reviewed journals, at conferences and meetings, and so forth), relevance to nursing home and ACF residents, and so forth, the project identified several possible candidate best practices for the evaluation. The Advisory Group further reviewed and scored the training modules and recommended a subset for use.
in the project. Initially, the project intended to implement six to eight evidence-based best practices in the experimental nursing homes and ACFs. During a meeting on September 10, 2003, convened by NYSDOH, the Advisory Group recommended limiting the number of practices to two for each facility; the group believed that nursing homes and ACFs would not be able to implement more than two practices successfully at one time. After selection of the modules, project staff finalized the outcome measures for evaluating the effectiveness of the interventions. The project randomly selected samples of nursing homes and ACFs from three regions in New York State and began recruiting facilities to participate in the study.

**Year 2.** With guidance from the Advisory Group as described above, project staff selected three evidence-based best practices with associated training modules and worked with the developers of the modules to adapt the materials and training process to meet the specific needs of New York State facilities. The three training programs were (1) Bathing without a Battle, which focused on person-centered bathing of individuals with dementia; (2) Vision Awareness, which promoted a low-cost intervention that increases staff knowledge of visual impairments; and (3) Staff Training in Assisted Living Residences (STAR), which helped staff understand and deal more effectively with difficult behavior problems among residents with dementia. Bathing without a Battle and Vision Awareness were selected for nursing homes and Vision Awareness and STAR for ACFs based on appropriateness for the target populations.

The project then recruited facilities: 15 nursing homes and 7 ACFs for each of the training programs. Training sessions for nursing homes and ACFs in the two experimental groups on all three modules began in the second year. For experimental group one, the project trained one or two staff members of the facility. In nursing homes, the trainee was usually the nurse educator. In ACFs, the trainee was usually the administrator or case manager. All trainees then returned to their facilities and trained other facility staff. For experimental group two, the project also trained the state surveyors responsible for quality assurance. Research staff collected baseline data on ACF residents by using a version of the Comprehensive Assessment and Referral Evaluation (CARE) and the Extended Interview, both of which are comprehensive assessment tools used extensively by RDHHAR in studies of comparable populations. As locally collected Minimum Data Set (MDS) data were to be used for nursing home residents, raw data collection for nursing home residents was not necessary. The first wave of data collection in ACFs, which also included interviews with staff and administrators and an environmental assessment, was completed for the control group and began for the experimental groups.

**Year 3.** Training continued for both nursing homes and ACFs. Implementation forms were collected from participating facilities to monitor their progress with training and implementation. The project completed the first wave of data collection at ACFs in the experimental groups early in the grant year and began follow-up data collection at the facilities that had implemented training modules earlier in the year and at ACFs in the control group toward the end of the grant year.

**Year 4.** During the fourth year, the project continued to provide training and implementation consultation to facilities. Due to staff turnover, 10 facilities experienced difficulty in continuing staff training such that the project had to deliver new “train-the-trainer” sessions. Retraining was conducted by the developer of the Vision module but not for STAR or Bathing without a Battle because of limited resources and the lack of available trainers.

As of the last project report, which covers the period from September 30, 2005, through September 29, 2006, the project completed collection of follow-up data for ACFs (using the RDHHAR tools) and was in the process of extracting MDS data for the nursing homes. Preliminary data analysis has begun, and final data analysis will begin once all data are compiled.
2. Partnership Structure/Function

NYSDOH/Health Research Inc. contracted with the Research Division at the Hebrew Home for the Aged at Riverdale to serve as the research partner for the project. RDHHAR developed and implemented the project’s research design, collected resident data from ACFs, and provided support to participating facilities in completing implementation tracking logs and other data collection forms. Project staff from NYSDOH and RDHHAR met or held conference calls at least monthly throughout the project. The two organizations consulted with experts at Columbia University and Advisory Group members to identify proven or effective evidence-based long-term care practices. They also identified ways in which the training should be delivered or adapted to meet the needs of staff in nursing homes and adult care facilities or to comply with New York State rules and regulations.

The expectation is that the three national organizations (AHCA, AAHSA, and AHFSA) represented on the Advisory Group will help disseminate and promote adoption of the evidence-based practice programs and training approaches through their national conferences and education vehicles. Project staff also sent updates to at least 40 “interested parties”—educators, researchers, trade association representatives, and regulators who offered to provide occasional advice or assistance.

Table 1. Major Partner Organizations and Roles in the Project

<table>
<thead>
<tr>
<th>Organization</th>
<th>Role in Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead Organization</strong>&lt;br&gt;(grant recipient)</td>
<td>New York State Department of Health, Division of Home and Community-Based Care (through Health Research Inc., an affiliated private organization)</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong></td>
<td>Research Division of the Hebrew Home for the Aged at Riverdale</td>
</tr>
<tr>
<td></td>
<td>Consultants and Advisory Group members</td>
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</tr>
<tr>
<td><strong>Target Organizations</strong></td>
<td>45 nursing homes and 21 adult care facilities in three regions in New York State</td>
</tr>
</tbody>
</table>
3. Project Evaluation and Outcomes/Results

The project will evaluate process data collected with respect to each module. To determine impact at the staff level, the project intends to look at the number of facility staff trained in the target facilities, assess how thoroughly best practices have been implemented, and compare pre- and post-training knowledge among staff. The project will also make resident-level comparisons between control and experimental groups. The project will analyze the impact and significance of the project once all the data have been compiled and will include the analysis in a final report.

After training was completed at the experimental sites, the project asked each facility to submit implementation forms that reported the number of staff trained as well as the fidelity of the particular intervention in that facility, i.e., how many vision logs were completed by those trained to assess vision, or how many “ABC” cards were filled out by those trained to address behavioral problems of patients with dementia. As of June 2006, among the nursing home sample, 10 of 15 facilities in the first experimental group trained staff in at least one of the modules; in the second experimental group (with surveyor training in addition to staff training), 14 of 15 facilities completed training in at least one of the modules. It is expected that the latter two numbers may increase somewhat after facilities are contacted and revisited in order to obtain final implementation data. Among ACFs, 6 of 7 in each of the two experimental arms completed one or both training modules. In total, staff from 28 facilities received vision training, staff from 6 facilities received STAR training, and staff from 22 facilities received bathing training. Several nursing homes and ACFs have neither trained staff nor implemented the modules. The two primary reasons facility administrators provided for inaction were (1) the need to address higher-priority issues and (2) attrition in staff trained at initial train-the-trainer sessions.

Some facilities participating in the experimental groups found the training to be useful. For example, some administrators say that, as a result of the bathing training, they have made some structural changes in the facility to improve residents’ bathing experience. One of the facilities’ interviewed indicated that it uses the training it received through the project in nurse aide classes, and another interviewee mentioned that the facility has integrated some practices into its standard procedures. Some facilities, however, mentioned that the time needed for training and/or completion of implementation monitoring logs and quality assurance forms was a significant burden. Others noted that turnover in directors of nursing often meant the loss of support for training programs while turnover in aides meant that the training had to be provided to all new aides if it were to be integrated into ongoing practice.

With insufficient funding, the project was not designed to assess directly via interview the impact of training on state nursing facility surveyors’ attitudes or understanding about what qualifies as an avoidable adverse outcome. However, the project will analyze staff training and implementation and resident indicators for the two experimental groups (one of which included state surveyors in the training program) to see if there were any differences in outcomes.

4. Major Products

- Presentation at the Gerontological Society of America Annual Meeting 2005--AHRQ Partnerships for Quality: Different Approaches to Information Dissemination
- Planned preparation of a manuscript outlining the process used to determine the strength of the evidence base of available off-the-shelf training modules

5. Potential for Sustainability/Expansion after PFQ Grant Ends

Some facilities indicated that a few project activities will continue in the future. For example, some aspects of the training will be provided to new staff, and some best practices have been integrated into standard procedures, e.g., asking new residents, upon admission, about their bathing preferences. The continued use of training programs depends on the availability of a trained “trainer” and the availability of
off-the-shelf and easy-to-implement training modules, as facility education staff otherwise have difficulty in providing the training.

The New York State Department of Health plans to use the project results to decide which types of training programs to support with the recurring funds available through its Dementia Grants Program. Pending the project’s favorable outcome, the department may also require or recommend the inclusion of elements of evidence-based training programs in state-mandated certified nurse aide training.
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**PFQ Grant Summary**  
**Accelerating TRIP in a Practice-Based Research Network**

**Lead Organization:** Physician Micro Systems, Inc. (PMSI)  
**Partner Team:** Practice Partner Research Network (PPRNet), Medical University of South Carolina (MUSC)  
**Topic Area:** Improved primary care physician adherence to practice guidelines in eight clinical areas  
**Principal Investigator:** Steven M. Ornstein, MD, Associate Professor, Family Medicine, MUSC  
**AHRQ Project Officer:** Margaret F. Coopey  
**Total Cumulative Award:** $1,294,555  
**Funding Period:** 9/02–9/06  
**Project Status:** Received no-cost extension until March 2007 (This information was provided by an AHRQ Grants Management Office report, October 23, 2006. If there was a discrepancy between information provided by the principal investigator (PI) and the report, we presented the end-date provided by the Grants Management report.)

1. **Project Description**

   **Goals.** This project sought to improve guideline adherence for 70+ indicators in eight clinical areas (heart disease and stroke, diabetes mellitus, cancer screening, immunizations, respiratory disease/infectious disease, mental health and substance abuse, nutrition and obesity, and drug prescribing for the elderly) by using an electronic medical record (EMR) in 100+ community-based primary care practices across the United States and by expanding PPRNet’s multimethod approach to quality improvement. Over the four-year project period, the project planned to 1) expand the number of practices participating in PPRNet from 40 to 100; 2) increase the number and diversity of clinical practice guidelines tracked in the PPRNet practice reports from 22 to 73; and 3) disseminate the PPRNet-TRIP (Translating Research into Practice) model of quality improvement through performance reports, site visits, and network meetings. (This last effort was funded by a previous AHRQ TRIP II grant.)

   **Activities and Progress.** PPRNet, a national consortium of primary health care providers and academic researchers from three universities, was formed in 1995 as a joint effort between PMSI, MUSC, and interested primary care practices. Each PPRNet practice is equipped with Practice Partner Patient Records, the EMR computerized system. Practices collect data on clinical guidelines outlined by PPRNet. Data are extracted quarterly from each practice and sent to PMSI electronically or on diskettes, and PPRNet staff generate the quarterly reports. Prior to receiving the PFQ grant, PPRNet produced quarterly performance reports on 22 clinical indicators for their 40 members. With PFQ funding, PPRNet expanded activities to include site visits in which MUSC staff and/or consultants from University of Southern California (USC) or University of Virginia (UVA) work with practices to improve guideline adherence, and annual network meetings where PPRNet members meet in person to discuss best practices and share lessons learned.

   In year 1, PPRNet membership increased from 40 primary care practices to 70 practices. PPRNet held its first annual network meeting in Seattle; 22 of the participating practices attended this meeting. In year 2, PPRNet membership increased to 78 participating primary care practices, 30 of which attended the annual network meeting in Seattle. In addition, the number of clinical practice guidelines tracked through the EMR increased from the initial 22 to 75, exceeding the project’s goal. Site visits also began in year 2 of the program. In typical site visits, PPRNet staff or consultants visited practices and met with the entire practice team in a large group session for approximately half a day. Focusing on the practices’ quarterly
report results, these sessions highlighted successful practice improvements and explored opportunities for future improvements. The PI and team conducted 68 site visits throughout the second year of the grant.

In year 3, PPRNet membership increased to 101 primary care practices, exceeding this project’s recruitment goal. Forty-five primary care practices attended the annual network meeting in Seattle. The project increased the number of clinical guidelines tracked to 84 and added three summary performance indicators. Site visits continued in years 3 and 4; project staff conducted an additional 79 site visits during the third year of the grant. All site visits were expected to be completed by July 1, 2006, but information on year 4 performance was not yet available when this summary was written.

2. Partnership Structure/Function

The lead on project activities for this grant is MUSC, where the PI and his staff, who provide overall leadership on this project, are located. The grantee, however, is PMSI, the EMR software company. PMSI’s primary role is to administer grant money and to provide technical assistance to the participating practices. PMSI also provides PPRNet with the names of new clients to use for their recruitment efforts. The partners’ roles are summarized in Table 1.

MUSC staff recruit new practices to participate in PPRNet activities, generate quarterly performance reports for practices, conduct site visits, and hold annual meetings for PPRNet members. Consultants from USC and UVA assist MUSC in designing, implementing, and evaluating projects, as well as in conducting site visits at participating practices.

The PPRNet participating practices are responsible for collecting and submitting clinical data on indicators to PPRNet. Practices participating in PPRNet receive quarterly performance reports, host site visits, and attend annual meetings.

A listserv connects the PI and members of PPRNet. The PI and PPRNet members share via email information and/or ideas on practice improvements, data access and reporting methods, EMR changes, etc. For computer and/or software issues, the PPRNet members contact PMSI representatives directly for assistance. Once a year, PPRNet holds an annual in-person meeting to discuss lessons learned and share best practices.

Table 1. Major Partner Organizations and Roles in the Project

<table>
<thead>
<tr>
<th>Organization</th>
<th>Role in Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead Organization</strong></td>
<td>Administers grant money</td>
</tr>
<tr>
<td>(grant recipient)</td>
<td>Provides TA for practices that have problems with the software program</td>
</tr>
<tr>
<td>Physician Micro Systems, Inc.</td>
<td>Provides names of new clients to PPRNet for recruitment into program</td>
</tr>
<tr>
<td></td>
<td>Maintains electronic discussion list and website for user support</td>
</tr>
<tr>
<td></td>
<td>Helps host annual network meetings in conjunction with user group meetings</td>
</tr>
</tbody>
</table>
### Table 1 (continued)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Role in Project</th>
</tr>
</thead>
</table>
| **Lead Organization (continued)** | • Provides overall project leadership  
| PPRNet (MUSC, location of PI Steven Ornstein) | • Generates reports for participating practices  
| | • Conducts site visits  
| | • Leads annual meetings  
| | • Recruits new practices into PPRNet  
| | • Designs, implements, and evaluates projects  
| **Key Collaborators** | • Work with MUSC staff to design, implement, and evaluate projects  
| Consultants at USC Keck School of Medicine and UVA College of Medicine | • Conduct site visits  
| **Target Organizations** | • Collect data on indicators  
| 100+ participating practices from 35+ states; practices range in size from solo nurse practitioners to 10+ clinicians | • Submit data to PPRNet  
| | • Participate in PPRNet activities (practice reports, site visits, annual meetings) |

### 3. Project Evaluation and Outcomes/Results

To examine the overall impact of the intervention, PPRNet developed a summary measure incorporating data from each patient within each practice. Called the Summary Quality Index (SQUID™), this measure calculates the percentage of processes and outcomes that are up to date or under control for a given patient and/or for a given practice. Across all practices, the summary measure rose from 25.0 percent at the beginning of the intervention (September 2002) to 30.3 percent at the end of year 2 (September 2004), a finding that is clinically and statistically significant.

In addition, the project implemented a summary indicator for diabetes care, termed the Diabetes Summary Quality Index (DM-SQUID™). As of January 1, 2004, the mean DM-SQUID among 72 practices with a total of 22,219 patients was 50.2 percent; as of August 1, 2005, the mean DM-SQUID among 68 practices with a total of 24,429 patients was 58.3 percent. Among the 66 practices with complete data at both time periods, the mean change in the DM-SQUID was 7.8 percent. Significant improvements occurred for 12 of the 13 individual measures. In a mixed linear regression model, practices having a higher proportion of male patients had higher DM-SQUID scores, and practices that attended the two-day 2004 PPRNet network meeting had greater improvements in the DM-SQUID than those that did not; previous experience with PPRNet TRIP research, the hosting of practice site visits, and specialty and practice size were not associated with extent of improvement.

PPRNet conducted a more complete analysis at the end of the program (June 30, 2006). Preliminary analysis suggests approximately 10 percent improvement in performance indicators. The evaluation component of the project will also include an in-depth case study of 10 PPRNet practices, a compendium of specific improvement approaches adopted by participating practices, and a final survey of all participating practices regarding the value of the project and its affect on the way they organized and ran their practices.

### 4. Major Products


• Six additional manuscripts currently being developed.

5. Potential for Sustainability/Expansion after PFQ Grant Ends

PPRNet has received additional grants (focusing on alcohol and cancer) to continue some of its activities. PPRNet will likely continue to generate reports for practices that continue to participate in its research activities. Practices that choose not to participate in the research aspect of PPRNet may need to pay to continue to receive the quarterly performance reports. PPRNet plans to continue to expand its network of primary care practices. Its goal is to grow by 25-50 practices per year. At least four additional related activities have developed from this project:

• Dr. Peter Miller and Dr. Raymond Anton, nationally recognized alcohol researchers at MUSC, have worked with project investigators to extend the alcohol research component of the project. During the summer of 2003, they conducted a survey of PPRNet primary care physicians about their alcohol and biomarker screening practices. The results from this project have been published. Drs. Miller, Anton, Ornstein, and Nietert also have been awarded a grant from the National Institute on Alcohol Abuse and Alcoholism to conduct a clinical trial to improve alcohol detection and treatment among hypertensive patients, by applying the PPRNet quality improvement model to a subset of practices participating in the Partnerships project. This project began in September 2004 and will continue for three years.

• A researcher at the Medical College of Georgia, Andria Thomas, PhD, joined the project team as a consultant to study adoption of obesity treatment guidelines in PPRNet practices. She completed a survey of project clinicians about their knowledge of and attitudes toward obesity treatment guidelines, and she conducted interviews with clinicians among practices that have excellent performance in achieving weight loss among obese patients. She is developing a manuscript summarizing the results of these studies and is collaborating with other project investigators to develop an intervention method that can be tested in PPRNet practices.

• Dr. Matthew White, a project physician from Lakewood, WA, is working with his independent practice association and others in Washington State to share how he has implemented his EMR and reorganized his practice to improve clinical care. He is making statewide presentations on this subject and has published a brief paper about it.

• Dr. James Wilson, a project physician from Fort Walton Beach, FL, has been contacted by the Institute of Medicine-Board on Health Care Services to present as a case study for performance measurement in a physician practice his work with the project. His presentation will provide background for an Institute of Medicine report, “Redesigning Health Insurance Benefits, Payments, and Performance Improvement Programs.”
PFQ GRANT SUMMARY
PARTNERSHIP FOR ADVANCING QUALITY TOGETHER

Lead Organization: Research Triangle Institute (RTI)
Partner Team: Five integrated delivery systems: UPMC Health System, Providence Health System (PHS), Intermountain Healthcare (IH), UNC Health Care, and Baylor Health Care System
Title: Partnership for Advancing Quality Together (PAQT)
Topic Area: Health care quality improvement, safety, and preparedness
Principal Investigators: Formerly Lucy Savitz, PhD, at RTI. After she left in September 2006, Shulamit L. Bernard, PhD, director of the Health Care Quality and Outcomes Program, became RTI’s principal investigator. Each health system subcontractor has a co-principal investigator as well.
AHRQ Project Officer: Sally Phillips, PhD, RN
Total Cumulative Award: $994,796
Funding Period: 9/02–9/05
Project Status: Received two no-cost extensions extending period of performance to September 2007

1. Project Description

Goals. In 2000, RTI received funding from AHRQ through the Agency’s Integrated Delivery System Research Network (IDSRN) initiative. The IDSRN initiative linked researchers with health care systems to conduct research on cutting-edge issues on an accelerated timetable. As an IDSRN partner, RTI has collaborated with health care systems to conduct various research initiatives, including projects focused on health care quality improvement (QI), safety, and preparedness.

When RTI applied for a PFQ grant, collaborators aimed to strengthen their existing IDSRN network and build on their IDSRN partnership work to influence the spread of the evidence base for quality improvement. Other goals included (1) exploring factors that impede and facilitate inter- and intra-organizational sharing of knowledge; (2) extending the breadth and depth of the evidence base for innovative, sustainable QI and bioterrorism preparedness programs; (3) providing a mechanism to test the transportability of clinical process innovations; and (4) accelerating the rate at which knowledge utilization occurs. In addition, each partnering organization was to participate in at least one patient safety or bioterrorism preparedness project. RTI later added goals aimed at advancing an understanding of partnership science and sharing such learning at the AHRQ program level.

Activities and Progress. An eight-month delay in the release of funds from AHRQ delayed work during the project’s first year. During that first year, however, RTI conducted a systematic literature search and applied the findings to (1) the development of a guiding framework for using partnerships to stimulate change and (2) the development of a companion partnership synergy survey. The survey assesses partnership strength and monitors continuous quality improvement among health care organizations. It addresses topics such as leadership and management, individual empowerment, synergy, and research transfer measures.

In subsequent years of the project, grant funds enabled RTI’s IDSRN partners to meet twice a year at the various partner health systems and to study the diffusion of effective health care interventions in 15 applied research projects pursued by partners under the IDSRN initiative (see Table 1). Project examples included medication information transfer across the care continuum, validation of AHRQ’s patient safety indicators, development of technology-based training for hospital preparedness, development and
implementation of prospective patient injury detection systems, and development of a tool for estimating the financial impact of and opportunities to reduce the cost of waste or poor quality. Of the 15 applied research projects, 10 have concluded and 5 are in progress. The PFQ grant aimed to share knowledge of innovation to leverage the spread of selected IDSRN interventions within and across the health systems in the partnership.

### Table 1. Partner Participation in IDSRN Initiatives

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Baylor</th>
<th>IH</th>
<th>PHS</th>
<th>UNC</th>
<th>UPMS</th>
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</thead>
<tbody>
<tr>
<td>Validating AHRQ Quality Indicators</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Assessing the IT Infrastructure in IDSs</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Validating AHRQ’s Patient Safety Indicators</td>
<td>X</td>
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<tr>
<td>Assessing IDS Solutions for Medication Information Transfer</td>
<td>X</td>
<td>X</td>
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<tr>
<td>AHRQ-Sponsored Workbook for Regional Preparedness</td>
<td>X</td>
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<tr>
<td>Estimating Risk Reduction and Cost-Enhancing Medication Information across Patient Care Settings</td>
<td>X</td>
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<tr>
<td>Facilitating Knowledge Transfer and Utilization via Hospital Patient Safety Indicator Online Query Tool</td>
<td>X</td>
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<tr>
<td>Facilitating Knowledge Transfer and Utilization of a Regional Bioterrorism Preparedness Workbook</td>
<td>X</td>
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<tr>
<td>Exploring the Special Needs and Potential Role of Nursing Homes in Surge Capacity for Bioterrorism and Other Public Health Emergencies</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Cost of Poor Quality or Waste in IDS Settings I</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Cost of Poor Quality or Waste in IDS Settings II</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Developing a Targeted Injury Detection System</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Medical Emergency Team Learning Opportunity</td>
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<tr>
<td>Implementing a Targeted Injury Detection System to Reduce Inpatient Injuries</td>
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<tr>
<td>Improving the Quality of Early Cancer Care</td>
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</table>

The in-person meetings of the RTI partnership group brought together senior management and operations staff who could identify their respective organization’s needs and help shape further research projects. The meetings provided partners with a forum for presenting and discussing the outcomes of completed IDSRN projects and examining partners’ uptake of those projects. RTI served as a conduit for the spread of innovation that led to new IDSRN projects and other diffusion-oriented grants.

To track the spread of information among its partnership members, RTI compiled correspondence, meeting minutes, and archival records that documented uptake. RTI asked partners to inform staff when their projects were completed and when there were outcomes to report. Based on the partner members’ health systems experience, RTI and the partner organizations developed a generalized approach to dissemination and implementation for bioterrorism preparedness and QI interventions that is based on the following six steps:

1. Pilot innovation in a credible place by a credible clinical champion with an engaged team that is empowered with resources
2. Create a toolkit or manual that serves as a conduit with an audit tool for performance monitoring and feedback to involved staff
3. Encourage review by an adopting organization and/or unit by linking an agent/clinical champion and his or her team

4. Allow adaptation by an adopting organization/unit over time

5. Provide for phased implementation by seeding the innovation on a small scale to support minimal adaptation and demonstrated value

6. Ultimately, spread organization-wide diffusion of intervention as appropriate

RTI also provided leadership and allocated a portion of its grant funds to support preparation of a supplemental issue of the *Joint Commission Journal on Quality and Patient Safety* to report on AHRQ learning from the Partnership Program. The supplement is currently scheduled for publication in spring 2007.

2. **Partnership Structure/Function**

RTI is the “facilitator” of the partnership, which involves several health systems. Under RTI’s innovation and implementation work as an IDS RN contractor with AHRQ, the partnership already existed before the launch of the PFQ program. The four initial partner health care systems were Intermountain Healthcare (IH), Providence Health System (PHS), University of North Carolina (UNC) Health Care, and University of Pittsburgh Medical Center (UPMC) Health System. After careful deliberation among RTI’s partners, Baylor Health Care System in Texas joined the partnership in 2004 and rapidly became a vital member of the team. The five partners offer a diversity of patient populations (including populations of priority interest to AHRQ); a strategic cross-section of the health care industry with respect to innovation, experience, and health information technology infrastructure; and health care settings appropriate for applied research. Organizational liaisons at each of the partner health systems are senior executives with sufficient standing to mobilize health system experts and actively engage them in the research process. These leaders have remained relatively constant throughout the grant period.

The partners all participated in the in-person meetings held biannually at different partner locations. The partners also communicated regularly through conference calls and e-mail. RTI established a confidential Web site for the partners to support their adoption of, communication about, and dissemination of shared learning.

**Table 2. Major Partner Organizations and Roles in the Project**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Role in Project</th>
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</thead>
<tbody>
<tr>
<td><strong>Lead Organization</strong>&lt;br&gt;(grant recipient)</td>
<td>RTI&lt;br&gt;• Serves as broker and facilitator in bringing partners together to conduct collaborative research and promote shared learning.&lt;br&gt;• Provides technical and administrative support in the research process.</td>
</tr>
<tr>
<td><strong>Key Collaborators</strong>&lt;br&gt;UPMC Health System&lt;br&gt;Providence Health System&lt;br&gt;Intermountain Healthcare&lt;br&gt;UNC Health Care&lt;br&gt;Baylor Health Care System</td>
<td>• Participate in biannual meetings and conference calls.&lt;br&gt;• Assist other collaborators by serving as models for interventions or by translating interventions.&lt;br&gt;• Work with RTI staff to translate innovative findings into manuscripts.</td>
</tr>
</tbody>
</table>
3. Project Evaluation and Outcomes/Results

RTI’s project focused on the spread of interventions developed within and across the partner health systems. RTI researchers also have provided support for broader intellectual development on concepts related to partnerships, including the development of several products and tools (e.g., the partnership framework, the survey tool to monitor partnerships, the six-step implementation strategy, the book chapter on synergies, presentations, and so forth).

The project has produced several important findings and strategies for supporting knowledge transfer: (1) organizational modeling by credible organizations can accelerate knowledge transfer; (2) the primary evidence base (peer-reviewed literature) is limited to the extent that many innovations are not reported, and there is a bias toward reporting only successful efforts even though failed attempts often offer just as much insight; and (3) innovations in health care delivery are often complex interventions with several elements that go unreported and with essential versus adaptable elements of interventions that are not clearly delineated.

The PFQ grant enabled RTI to learn how to manage and sustain a partnership. The partnership has since evolved into a “learning laboratory” with many ideas flowing from the shared learning experience. The ideas have led to proposals for the IDSRN and other AHRQ initiatives. The partners were exposed to cutting-edge initiatives at the meetings, and their interactions with each other presented new learning opportunities. The partnership also offered the partners credibility within their organizations when they presented new ideas.

RTI used its partnership strength assessment tool for evaluation, thereby indicating continued, active involvement of partnership organizations. Given its partnership framework and monitoring tool, RTI has attracted international interest, with health systems in Canada and Sweden participating in some meetings.

4. Major Products

- Framework and companion survey tool for assessing partnership strength
- Compendium CD with copies of selected partnership science literature and tools
- Presentations at AcademyHealth 2004 Annual Research Meeting, “Demand Driven Research: The RTI Integrated Delivery System Research Network,” and at the AHRQ Translating Research into Practice meeting, July 2004 (by Dr. Lucy Savitz)
- Supplemental issue of the *Joint Commission Journal on Quality and Patient Safety* reporting on AHRQ learning from the Partnership Program

5. Potential for Sustainability/Expansion after PFQ Grant Ends

Given that RTI has received an award through the ACTION program (Accelerating Changes and Transformation in Organizations and Networks), which is AHRQ’s new program that builds on the IDSRN, project activities will continue. The ACTION Master Task Order continues the relationship between RTI and its partner health systems, which will function as an applied research network to identify best practices and, for example, develop and test targeted injury detection systems, develop a system to redeploy unused health care resources, and create a prototype national patient tracking/locator model for use in times of disaster. RTI’s partner health systems will extend the network’s capacity by engaging local partners such as the Utah Department of Health; the Salt Lake Informatics, Decision Enhancement, and Surveillance Center (IDEAS); and the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill.

The partnership strength model developed by RTI demonstrates that, to see value in a partnership, partners must perceive that they are actively participating in research activities. To meet the needs of all
partners, RTI is continually and actively seeking out research opportunities for them. To this end, RTI has engaged some of the partners in a separate Master Task Order entitled Developing Evidence to Inform Decisions about Effectiveness (DEcIDE), which was awarded to RTI through AHRQ’s Effective Healthcare Program. Local partners of the partnering health systems were subcontractors on the first project awarded as part of the Master Task Order.

It is uncertain whether in-person meetings, which are dependent on funding, will continue after the PFQ grant ends. Yet, regular communication and collaboration with most of the partners will certainly continue as a function of the partners’ ongoing involvement in important projects that are in progress at RTI.
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1. **Project Description**

**Goals.** The project had two original aims: (1) to improve type 2 diabetes care in partner hospitals, clinics, and other organizations by implementing a care management intervention and (2) to conduct a case study of the management of bioterrorism (BT) funding on the readiness of public health and acute care systems in selected Texas Department of Health regions to respond effectively to BT threats. When the first component on diabetes care was not funded, the grantee changed its project to focus solely on the bioterrorism component. It revised its goal as “the formation of partnerships that will facilitate the study of important factors related to preparedness for bioterrorism and natural disaster.”

**Activities and Progress.** During the first year, the project formed an Advisory Council to guide the study of selected regions’ use of U.S. Centers for Disease Control bioterrorism preparedness funding and conducted and completed case studies of Public Health Region 8 (the San Antonio metropolitan area and 21 surrounding counties) and Region 2/3 (Dallas/Fort Worth metropolitan area). It found that (1) a regional strategy for resource allocation can be more effective in providing essential epidemiology services to small rural counties than a strict per capita allocation to each county; (2) regular disease surveillance systems can be used for bioterrorism incidents; (3) clear lines of authority and cooperation across those lines of authority are needed; (4) personal relationships and trust are critical to building relationships for preparedness, with such relationships developed through regular communication and the fulfillment of promises in allocating funds; and (5) continual and clear communication is necessary to achieve bioterrorism preparedness among an established network of people. The study found that Region 8 had one of the best emergency preparedness plans in the country, as confirmed by its subsequent response to Hurricanes Katrina and Rita.

The case study also found that public health officials experienced difficulty in obtaining the cooperation of physicians in all public health matters, even in state-required reporting of infectious disease cases. Therefore, the research team developed a learning exercise about Avian flu for medical students, which it taught to second-year students at the Texas A&M College of Medicine. The exercise emphasized the importance of reporting requirements and cooperation among all sectors for both emergency preparedness and day-to-day use.
Given that disease surveillance is such an important component of an effective disaster preparedness system, the project decided in its second year to study how disease surveillance methods in Texas and Mexico could affect the delivery of health care services in the event of bioterrorism or natural disaster along the U.S.-Mexico border. The project team conducted interviews with public health officers, emergency managers, the director of the U.S. Air Force surveillance agency, two health officers for the Mexican border town of Acuna, and the Texas state epidemiologist. The study found that information flows rely on a mix of statutory and informal networks; that public health officers working in the field often have no formal training in public health; that many doctors and hospitals do not routinely report on reportable diseases; and that obstacles prevent information sharing about disease surveillance on the Texas-Mexico border. It recommended improved information infrastructure at the local public health level and between U.S. and Mexican public health officials.

In the third year, the project team used the findings from the study of U.S.-Mexico border disease surveillance issues to help the Altarum Research Institute, another grantee and partner in the program, develop a causality prediction model to estimate the effects of early detection strategies for smallpox and influenza. It found, for example, that the effect of restricting casual contacts by infected individuals was greatest for the first couple of contacts, suggesting that absolute quarantines would not be necessary or cost-effective. This finding prompted the project team to expand its study of disease surveillance at international borders to the U.S.-Canada border.

Through Altarum’s contacts, the study team formed an informal partnership with Michigan public health officials to undertake research on areas of similar and dissimilar concern about infectious disease surveillance at both the northern and southern U.S. borders. The research identified four issues that should receive priority: (1) robust bi-national health organizations that overcome jurisdictional obstacles to public health; (2) funding for border health security; (3) local-regional public health agencies able to function relatively independently during disaster; and (4) mechanisms to identify and properly manage emerging health disparities at both borders. At the state and federal levels in the United States, Canada, and Mexico, the findings recommended efforts to develop formal communication channels at the federal level among all three governments and to resolve differences in diagnostic standards and reporting requirements for communicable diseases. It also recommended creating and funding a bi-national border organization between the United States and Canada and providing adequate funding for existing U.S.-Mexico bi-national organizations. Finally, the research recommended planning and exercising effective preparedness for all types of disasters across the international borders.

In the final year of the project, the team had two goals. It planned to complete its analysis of disease surveillance communication patterns and problems on both U.S. borders and to conduct disaster-training exercises in small rural hospitals that belong to a network of Texas A&M’s Rural and Community Health Institute. The training exercises or drills focus on Avian flu to enable small, rural hospitals to approximate the preparedness achieved by urban hospitals with more extensive resources and training opportunities. The exercise used an AHRQ-developed tool called Evaluation of Hospital Disaster Drills: A Module-Based Approach.

2. Partnership Structure/Function

The project investigators created an Advisory Council that met on a quarterly basis to provide input into and feedback on the project and its findings. In addition to staff at Texas A&M Health Sciences Center, the Advisory Council included the director of Texas Public Health Region 8, the School of Rural Public Health, and the head of the Texas Department of Health’s State Epidemiology Office. The Texas Department of Public Health’s Region 8 was more the subject of the project’s first case study than a partner in carrying out the research. The lead organization, TAMUS, also developed a partnership with the Altarum Research Institute during the first six months of the project after learning that both it and Altarum had a mutual interest in disaster preparedness.
Table 1. Major Partner Organizations and Roles in the Project

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<tr>
<th>Organization</th>
<th>Role in Project</th>
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| **Lead Organization** (grant recipient) | • Co-principal investigator responsible for communicating with partners; deciding on research design, regions to be studied, staff Advisory Council; leads and directs all data collection and analyses and reports.  
• Directed by principal investigator, provides platform for disseminating lessons learned to hospitals in RCHI network. |
| Texas A&M University Systems (TAMUS) Health Science Center, Rural & Community Health Institute (RCHI) | |
| **Key Collaborators** | • Collaborator in conducting studies of disease surveillance using its electronic model for healthcare. |
| Altarum Research Institute, Inc. | |
| **Target Organizations** | • Medical students to test training program involving an Avian flu exercise.  
• Conducted Avian flu disaster drills in 15 rural hospitals. |

3. Project Evaluation and Outcomes/Results

The project engaged an independent qualitative evaluator who reviewed the case study and wrote a report of the first year’s work. Project outcomes consisted of (1) reports (see below) and publications whose findings have lessons and potential applicability elsewhere and (2) disaster preparedness training exercises for medical students and rural hospitals. Medical students provided feedback on the Avian flu training exercise, and independent public health officials observed and wrote reports for each participating hospital on the rural hospital training exercise.

The case studies produced several important recommendations for policy and practice. One recommendation is for state and national public health officials to develop policies that target funds to disease surveillance methods that produce the greatest impact in mitigating disease burden in BT and natural disasters, particularly in U.S. border areas, which are widely acknowledged to pose risks to homeland security. However, the existence of 50 state systems impedes rapid communication with Canadian and Mexican authorities, which operate centralized disease surveillance reporting systems. Additional policy recommendations include the need for robust bi-national health organizations to overcome jurisdictional obstacles to public health; the need for local-regional public health agencies that function relatively independently during disasters; and the need to understand and properly manage emerging health disparities at both borders.

4. Major Products


5. Potential for Sustainability/Expansion after PFQ Grant Ends

The hospital exercises conducted in March 2006 merged the Rural and Community Health Institute (RCHI) network with the work of this project, which holds potential for sustainability of disaster preparedness work in small, rural Texas hospitals. For example, three hospitals that did not participate in the March training program have asked the team to conduct the exercise again. The RCHI network offers the potential for sustaining disaster preparedness activities. The team also plans to pursue funding for continued work with Altarum, the delivery of training exercises for rural hospitals, and additional studies of U.S. border disease surveillance systems.
PFQ GRANTEE SUMMARY
PARTNERSHIP FOR ACHIEVING QUALITY HOME CARE

Lead Organization: Visiting Nurse Service of New York (VNSNY)
Partner Team: VNSNY with 8 home health agencies, and starting in year 3, Delmarva and other QIOs
Title: Partnership for Achieving Quality Homecare (PAQH)
Topic Area: Better use of evidence-based quality improvement approaches by home care agencies serving the elderly
Principal Investigators: Penny Hollander Feldman, Director, Center for Home Care Policy and Research, VNSNY
AHRQ Project Officer: Judy Sangl
Total Cumulative Award: $913,667
Funding Period: 10/02–09/06
Project Status: Received a no cost extension through September 2007

1. Project Description

Goals. This project sought to improve home care for elderly individuals by creating a learning collaborative—the Partnership for Achieving Quality Homecare (PAQH)—through which selected home care agencies throughout the nation could (1) identify and prioritize improvement goals and (2) gain access to methods, tools, and materials that would enable them to conduct more sophisticated, evidence-based quality improvement activities than they could individually. The project originally planned to focus on one clinical condition prevalent in the home care population. Over the four-year project period, however, it considered the possibility of expanding either by adding partners and/or target conditions. The project also planned to develop a “toolkit” of materials and techniques that could be disseminated to home care agencies for use in translating research findings into daily practice.

Activities and Progress. The first year was devoted primarily to planning and setting the foundation for the project. The lead agency, VNSNY, established a partnership steering committee, which selected diabetes as the clinical focus for the project. The project invited home health agencies to join the improvement initiative if they had a reputation for innovation and the capacity to participate, i.e., interested staff, information systems, ability to pay for participants’ trips, etc.

The eight agencies selected were dispersed geographically, were a mixture of nonprofit and for-profit entities, and varied in size. The agencies formed three-person QI teams, collected baseline performance data according to the instruments developed by VNSNY, and participated in a collaborative learning model, which was based on the Institute for Healthcare Improvement (IHI) Breakthrough Series. Agencies participated in three face-to-face meetings, with the first meeting highlighting the Model for Improvement. The collaborative adopted the rapid cycle “Plan-Do-Study-Act” (PDSA) approach to quality improvement in order to test and implement clinical practice guidelines developed by the American Diabetes Association.

During the second year, collaborative agencies worked on three common targets for diabetes quality improvement—glycemic control, foot care, and medication management—and on two other areas of their choosing (e.g. hypertension, lipid control, lifestyle changes). Each agency assessed the gap between current and desired performance targets and worked to achieve the targets with support via phone (coaching) calls with the VNSNY staff and consultants, and from each other at two subsequent meetings. Using chart review data submitted by each agency on diabetes patients, VNSNY prepared monthly feedback reports containing data on outcomes and processes of care, including data from the
supplemental Outcome and Assessment Information Set (OASIS) collected at two points in time. VNSNY also established a listserv for informal communication among collaborative members.

In the third year, VNSNY evaluated the results and lessons from the diabetes learning collaborative and created a strategic expansion plan, which involved not only adding new partners to extend the reach of QI activities, but also a new clinical focus—reduction of acute care hospitalization among home health recipients. Seven of the eight PAQH home health agency members agreed to participate in the second collaborative. With help from the project’s AHRQ program officer, VNSNY secured a commitment from the Delmarva Foundation, the QIO for Maryland and DC and the QIO Support Center for home health improvement for all QIOs at the time, to help recruit several QIOs from around the country, and a few additional home health agencies, to participate in the new collaborative. VNSNY planned to use a different learning collaborative model, relying on web-based technology to hold training and on seminars to hold down costs while sustaining the core elements of the learning collaborative. VNSNY developed pilot training materials and outcome measures for this acute care hospitalization collaborative.

In the fourth year, to extend the reach of home health QI initiatives, VNSNY began working with 10 QIO representatives from around the country on a strategy to develop a “wholesale” model for disseminating evidence-based strategies for home care practice tailored to the needs and issues unique to home health care agencies working with decentralized staff and led by nurses. The focus is on Reducing Acute Care Hospitalization, hence the name “ReACH.” The lead QIO changed to Quality Insights of PA, which helps recruit and support communication with participating QIOs. VNSNY also developed a system for collecting measures on acute care hospitalization, which is in the OASIS data set submitted to CMS. The ReACH Collaborative was implemented in two overlapping waves over two years. The 1st wave ends in December 2006, while the second wave began in September 2006 and will end in August 2007. Participating home health care agency teams attended three Learning Sessions hosted by their respective QIOs to hear and share best practices for improvements in the multiple content areas. At each session, teams reported on the activities, methods, and results surrounding their improvement efforts. With the expansion of the partnership, VNSNY utilized distance-learning technology (WebEX, teleconference) to allow simultaneous learning and sharing while minimizing project costs to expand access to a wide audience of participating home health agencies.

2. Partnership Structure/Function

The Diabetes Collaborative had a partnership steering committee made up of CEOs and other management-level representatives from the participating organizations who were a critical part of the planning process. They provided the human and financial resources needed to implement the project and supported the cross-agency learning process and evaluation.

The ReACH Collaborative also has an advisory group, which was more involved than the first collaborative’s steering committee in project design. Those on the advisory group include QIO representatives, the QIOSC, Quality Insights of PA, and ReACH Collaborative faculty. In the early part of this initiative, VNSNY had weekly or biweekly calls with the QIOs to support project design and initiation. Currently, the advisory group conducts monthly conference calls with QIOs. In addition, the ReACH Collaborative has engaged a partners group that includes key stakeholders such as CMS, Visiting Nurse Associations of America, and other leaders from the home care industry and professional organizations. This group is convened quarterly to assess the project design, implementation, and opportunities for expansion and additional support.
Table 1. Major Partner Organizations and Roles in the Project

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<tr>
<td><strong>Lead Organization</strong>&lt;br&gt; (grant recipient)</td>
<td>• Provide overall leadership and direction to the Collaboratives; create and staff expert panels and steering committees to guide project development and content; develop and implement evaluation plans and activities on project impact; provide training and technical assistance to participating home health agencies and QIOs; assess opportunities for expansion and sustainability of project outcomes</td>
</tr>
<tr>
<td>VNSNY&lt;br&gt; PI: Penny Hollander Feldman, PhD</td>
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<tr>
<td><strong>Key Collaborators</strong></td>
<td>• To recruit QIOs and home health agencies from the acute hospitalization pilot test as participants for the second ReACH Collaborative</td>
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<tr>
<td>Delmarva Foundation (the QIO for MD &amp; DC). In year 3, switched to Quality Insights of PA—the QIO support center for HH quality improvement</td>
<td>• QIOs recruit and work with participating agencies to actively support the implementation and spread of the initiative throughout the project period; QIOs host participating agencies for each learning session and provide direct coaching and technical assistance to the teams to support their improvement efforts during the action periods</td>
</tr>
<tr>
<td>10 QIOs, beginning in year 3</td>
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<tr>
<td><strong>Target Organizations</strong></td>
<td>• Commitment to achieving explicit goals in selected common areas of collaborative; involvement of three team members in both collaborative learning sessions and bi-monthly conference calls; willingness to share outcomes and assessment information set and other data on achievement of process and outcomes goals; commitment to providing their change results in a timely manner; willingness to have a site visit</td>
</tr>
<tr>
<td>8 home health agencies located throughout the country</td>
<td></td>
</tr>
<tr>
<td>69 home health agencies participating in REACH National Demonstration Collaborative</td>
<td>• Home health agencies designate a senior leader, or “spread sponsor,” for the initiative to support the necessary systems redesign, staff training, and practice improvements across the agency to reduce avoidable hospitalizations; agency participants designate a 3- to 5-member team to participate in the full implementation of the collaborative; agency teams test and implement key changes to meet the Collaborative aims, report monthly data on process measures, and share key lessons learned within and across Collaborative teams; agencies are expected to participate in each wave of the Collaborative to support spread of successful changes throughout the agency</td>
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3. Project Evaluation and Outcomes / Results

The evaluation of the first learning collaborative found that all eight teams integrated change into systems or standard operative procedures. Many accomplished this by redesigning agency-wide forms and documentation, while some worked more closely with their diabetes nurse specialists or revamped the orientation for new staff. All of the teams also codified change into their training manuals and other systems by, for example, adding new competencies around the core topics for their nursing staff or creating standards of care for diabetes patients to be used throughout the agency. Five of the eight teams had used or were planning to use the PDSA model for other quality improvement initiatives, and six teams had integrated or intended to integrate the improvement process into their other improvement initiatives.
The main domains and measures/research questions used for the evaluation of the first diabetes learning collaborative, which were very comprehensive, included (1) collaborative reach in numbers of patients affected; (2) leadership experience, engagement, and satisfaction, including perceived value of participation in the Collaborative and its impact on each organization’s strategic objectives, (3) team/staff experience, expectations, engagement, and satisfaction, (4) success in implementing the improvement model, and in collecting and submitting data; team use of data to make changes in clinical care practices, (5) spread beyond pilot group and use for other quality initiatives, and sustainability of change via integration into existing systems and processes, training manuals, and other systems or through commitment from leadership for continuation and integration of the QI process with other initiatives; (6) clinical improvement (discussed below); and (7) cost of the Collaborative’s direct costs.

A complete review of the outcomes is beyond the scope of this summary, but some examples suggest that the outcomes were very positive. In terms of leadership’s perceived value of the project, a majority of home health agency CEOs and clinical managers surveyed after the diabetes collaborative ended agreed or strongly agreed that their agency’s participation led them to revise their approach QI initiatives and helped to identify changes that they intended to spread to the entire organization. Over 70 percent of the CEO/managers strongly agreed that their agency’s participation in the Collaborative was likely to lead to lasting improvement in care provided to patients with diabetes.

Agencies were required to submit monthly data on the following clinical measures:

**Glycemic Control**
1. Patients with an individualized glycemic control plan (“target” blood sugar range)
2. Patients testing their blood glucose according to their plan most or all of the time (among patients with a control plan)
3. Patients whose blood glucose is in their target range most or all of the time

**Foot Care**
1. Patients who received a comprehensive foot exam (visual inspection, vascular assessment and testing for sensation) within 10 days of home care admission
2. Patients (and/or their caregivers) who received education about foot care
3. Patients who did not develop a new foot ulcer during home care

**Medication Management**
1. Patients (or their caregiver) who can return-demonstrate administration of their insulin (among patients who are taking insulin)
2. Patients taking their diabetes medications as prescribed most or all of the time (among patients taking one or more diabetes medications)
3. Patients whose prescribed medications have been reviewed for possible drug interactions or contraindicated medications

In terms of clinical outcomes, chart review data from monthly reports submitted by participating agencies showed that the greatest improvement, Collaborative-wide, was in the proportion of persons with diabetes who received a comprehensive foot exam within 10 days of their admission to home care, with an increase of over 50 percentage points during the course of the Collaborative. Increases of over 30 percentage points, Collaborative-wide, were also demonstrate for 1) percent of patients with an individualized glycemic control plan, 2) percent of patients testing their blood glucose according to plan most or all of the time, 3) percent receiving education about foot care, and 4) percent whose medications were reviewed for contraindications. These results should be interpreted with caution because there was no control group, but the clinical change data suggest that performance on eight of the nine clinical measures increased over the course of the collaborative and for three months after it ended. The one
exception was in “no new foot ulcer,” which did not change substantially, as it was already quite good at the start.

VNSNY developed an evaluation plan to assess the implementation and impact of the ReACH National Demonstration Collaborative. The primary objective is to evaluate the effectiveness of the Collaborative in reducing acute care hospitalization rates among participating home care agencies. The four key components of the evaluation plan include: 1) assess the improvement work of participating home care agencies (monthly performance data); 2) document the strategies employed to reduce acute care hospitalizations at participating home care agencies; 3) assess QIO supports to facilitate the improvement work of participating home care agencies; and 4) determine the effectiveness of the virtual Collaborative Learning Model approach to reduce avoidable hospitalizations. Data will be collected in interviews with key home health agency staff from a random sample of participating home care agencies, surveys of participating QIO staff, online evaluations of learning sessions, and monthly performance data of key clinical indicators. Project staff will assess the change in performance on each of 5 clinical indicators, comparing results from a baseline study period with results from a post-implementation study period. These data will be assessed for each Wave of the Collaborative (Jan-Dec 2006; Nov-Aug 2007).

4. Major Products

- Acute Care Hospitalization Toolkit
- Diabetes Toolkit and Dissemination Document (for each collaborative)
- ReACH Project Website (paqh.org/ReACH). PAQH engaged IANet technology partners to support development of a project website to serve as the core infrastructure for the national virtual Learning Collaborative. The ReACH project website is a resource for participating agencies to submit data, view agency-specific and national performance, and download or link to valuable tools and resources to support improvement efforts aimed at reducing acute care hospitalizations. All registered users are automatically enrolled on the agency listserv to support communication and sharing of information with peers across the country.
- Presentations: (1) October 2002, Deans from the Rutgers, Yale, U Penn, NYU, Columbia, Hunter, and Pace nursing schools; (2) January 2003, New England Health Care Summit in Boston; (3) September 2003, “A National Quality Agenda and Experiences from the Field” at the National Association for Healthcare Quality’s Annual Education Conference; and (4) July 2006, Translating Research Into Practice Meeting in Washington, DC. Collaborative participants also presented about the project to state departments of health and agency boards.
- Organized the national meeting, “Advancing the Agenda for Home Healthcare Quality,” held on March 31-April 1, 2005. Proceedings were published in Home Healthcare Nurse, May 2006, and the commissioned papers were published in JHQ, Jan/Feb 2006.
- “The Importance of Screening for Depression in Home Care Patients,” Caring, November 2003.
5. Potential for Sustainability/Expansion After PFQ Grant Ends

As noted, the Diabetes Collaborative appeared to have long-lasting effects on quality improvement initiatives within the eight participating home health agencies. Seven of the eight that decided to continue with the ReACH collaborative have demonstrated their interest in and commitment to continuing QI activities, at least in an advisory capacity.

The Reducing Acute Care Hospitalization Collaborative will continue until August 2007 with additional funding obtained from the Robert Wood Johnson Foundation. Additionally, the project received a no cost extension until September 2007. VNSNY hired a business consultant to help them develop a strategic sustainability plan. The plan included research and interviews with current and prospective partners, clients and key stakeholders. Initial findings of the plan have revealed opportunities to extend the Partnership and serve a key role with a variety of local and national stakeholders to support translation of evidence-based strategies to frontline home care practice. The plan will be finalized by the end of Project Year 5.